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ABSTRACT

This study seeks to quantify the costs and benefits of alcohol and drug abuse treatment and the resulting economic benefits to society. Using data from the National Treatment Improvement Evaluation Study (NTIES), and client questionnaires, estimates were made of the average costs per client in terms of crime-related costs, health care costs, and social welfare benefits in the 12 months prior to and after treatment. Estimates of average earnings for clients in the pre-treatment and post-treatment periods were calculated. Overall, the findings indicate modest changes in average health care costs (11% reduction per client) and earnings of substance abusers (9% increase) in the period after treatment. Essentially no change in welfare payments or Supplemental Security Income was found. However, large reductions in crime-related costs (about 75%) were found. Over 94 percent of the estimated treatment benefits were derived from the reductions in crime-related costs. Implications for research, policy, and practice are discussed. Included are: "Appendix A: Description of the National Treatment Improvement Evaluation Study and Center for Substance Abuse Treatment Demonstrations (1990-1992)"; "Appendix B: Cost Methodology"; "Appendix C: Treatment Costs"; "Appendix D: Health Care Utilization"; "Appendix E: Detailed Tables on Annual Earnings and Social Welfare Benefits"; and "Appendix F: Crime-Related Costs and Criminal Activity." (Contains 126 tables and 22 references.) (MKA)

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NATIONAL EVALUATION DATA SERVICES

THE COSTS AND BENEFITS OF SUBSTANCE ABUSE TREATMENT: FINDINGS FROM THE NATIONAL TREATMENT IMPROVEMENT EVALUATION STUDY (NTIES)

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FOREWORD

The Center for Substance Abuse Treatment (CSAT) works to improve the lives of those affected by alcohol and other substance abuse, and, through treatment, to reduce the ill effects of substance abuse on individuals, families, communities, and society at large. Thus, one important mission of CSAT is to expand the knowledge about the availability of effective substance abuse treatment and recovery services. To aid in accomplishing that mission, CSAT has invested and continues to invest significant resources in the development and acquisition of high quality data about substance abuse treatment services, clients, and outcomes. Sound scientific analysis of this data provides evidence upon which to base answers to questions about what kinds of treatment are most effective for what groups of clients, and about which treatment approaches are cost-effective methods for curbing addiction and addiction-related behaviors.

In support of these efforts, the Program Evaluation Branch (PEB) of CSAT established the National Evaluation Data Services (NEDS) contract to provide a wide array of data management and scientific support services across various programmatic and evaluation activities and to mine existing data whose potential has not been fully explored. Essentially, NEDS is a pioneering effort for CSAT in that the Center previously had no mechanism established to pull together databases for broad analytic purposes or to house databases produced under a wide array of activities. One of the specific objectives of the NEDS project is to provide CSAT with a flexible analytic capability to use existing data to address policy-relevant questions about substance abuse treatment. This report has been produced in pursuit of that objective.

This analytic report examines the estimated costs and benefits that accrue as the result of substance abuse treatment using data from the National Treatment Improvement Evaluation Study (NTIES). Our findings indicate that the total benefits of substance abuse treatment in terms of avoided health care, welfare, SSI, and crime-related costs and increased earnings far exceeded the cost of treatment.

Sharon Bishop
Project Director
National Evaluation Data Services

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EXECUTIVE SUMMARY

1. INTRODUCTION

In 1996, expenditures for the diagnosis and treatment of alcohol and drug abuse reached $12.6 billion, according to one estimate (McKusick et al., 1998). Federal expenditures for substance abuse treatment singularly accounted for almost $2.7 billion of these national expenditures (Office of National Drug Control Policy, 1998). Despite these large outlays, the Department of Health and Human Services estimated that 1.7 million "hardcore" substance abusers, or 48 percent of those most in need of treatment, were not receiving services in 1994. One million of these individuals were estimated to be in need of publicly supported treatment.

Proposals calling for increased public funds to support substance abuse treatment often face intense criticism. Nevertheless, the economic soundness of such policies depends on the cost effectiveness of treatment. The purpose of this study is to quantify the costs and benefits of alcohol and drug abuse treatment and the resulting economic benefits to society, using data from the National Treatment Improvement Evaluation Study (NTIES).

We constructed estimates of treatment costs for each of the modalities and across all modalities. To measure benefits, we use data from NTIES to estimate the crime-related and health care costs associated with substance abusers and the income of substance abusers in the periods before and after treatment. The difference between pre-treatment (baseline) costs and post-treatment (follow-up) costs provides an estimate of the economic impact of substance abuse treatment. This "treatment effect" is viewed as a benefit to the extent that it represents avoided crime-related costs, health-care costs, or welfare payments or increased earnings. In other words, in our model the benefits of treatment are equal to the additional costs that would have been incurred and the additional earnings that would not have been realized in the absence of treatment.

2. METHODOLOGY

Using information from the NTIES service delivery unit (SDU) and client questionnaires, we estimated the average costs per client in terms of crime-related costs, health care costs, and social welfare benefits in the 12 months prior to and after treatment. In addition, we constructed estimates of average earnings for clients in the pre-treatment and post-treatment periods. All 5,388 clients who completed an intake and a follow-up interview were eligible for inclusion in

the analyses. The responses of 124 individuals who were still in treatment were eliminated from the data set, resulting in a sample size of 5,264 clients.

3. FINDINGS

In presenting our results, we distinguish between benefits to society and benefits to the non-treated population. The main difference between these two categories is in the treatment of transfers and the income of clients. Transfers are a redistribution of payments or property from one individual to another, such as theft losses or welfare payments. From an economic perspective, such transactions do not have any *direct* affect on the well being of society, and, therefore theft losses and welfare payments are not included in the calculation of benefits to society. However, theft losses and taxes used to make welfare payments to clients do affect non-treated individuals who are victims of crimes and who pay taxes. Thus, theft losses and welfare payments are included in the calculation of benefits to the non-treated population. Using a similar rationale, we include increases in the earnings of clients as a benefit to society, but such changes have no direct affect on the non-treated population and, therefore, are not included in the benefits to the non-treated population.

Overall, the findings indicate modest changes in average health care costs (11% reduction per client) and earnings of substance abusers (9% increase) in the period after treatment. Moreover, we found essentially no change in welfare payments and Supplemental Security Income. However, our results indicate large reductions in crime-related costs (about 75%). Indeed, over 94 percent of the estimated treatment benefits were derived from the reductions in crime-related costs.

In Exhibit 1, we present the study's main results. Our findings indicate that the total benefits of substance abuse treatment in terms of avoided health care, welfare, SSI, and crime-related costs and increased earnings far exceeded the cost of treatment. Overall, we estimate that treatment created an average benefit to society of $9,177 per client and an average benefit to the non-treated population of $12,477 per client. By deducting the average cost of treatment per client per episode ($2,491), we estimate that *net* treatment benefits averaged $6,236 and $9,536 per client for society and the non-treated population, respectively. The results in Exhibit 1 imply that the ratio of benefits to costs was 3.1 to 1 to society and 4.2 to 1 to the non-treated population. Moreover, our results (not shown in Exhibit 1) generally indicate that treatment was cost effective across a wide range of modalities, with the benefits more than offsetting the cost of publicly supported substance abuse treatment provided through the demonstration grants.

EXHIBIT 1
AVERAGE PER CLIENT BENEFITS OF SUBSTANCE ABUSE TREATMENT

	(A) Before Treatment	(B) After Treatment	(A - B) Benefits to Society	(A - B) Benefits to Non-Treated Population
Average Health Care Costs per Client	$2,041	$1,826	$215	$215
Average Earnings per Client	$3,915	$4,266	$351	NA
Average Welfare Payments per Client	$724	$732	NA	-$8
Average SSI Payments per Client	$587	$582	NA	$5
Average Crime-Related Costs to Society per Client	$11,462	$2,851	$8,611	$8,611
Average Theft Losses	$4,924	$1,270	NA	$3,654
Total Benefits per Client			$9,177	$12,477
Average Treatment Costs per Episode			$2,941	$2,941
Net Benefits per Client (Total Benefits—Treatment Costs)			$6,236	$9,536

Notes: NTIES was conducted from 1993-1995. NA = not applicable.
Source: Authors' analysis of data from National Treatment Improvement Evaluation Study.

4. CONCLUSIONS AND IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

Policy makers often face the difficult task of justifying to taxpayers the use of public funds to support substance abuse treatment. For the public and policy makers, who rely on the voters backing, the relevant question is "can substance abuse treatment create benefits to the rest of society that justify public expenditures?" For the treatment supported by the CSAT-demonstration grants, our study suggests the answer is yes. Our results indicate that society and the non-treated population benefit from publicly supported substance abuse treatment provided to critical populations, such as those supported by the CSAT-demonstration grants and represented in the NTIES data.

The next steps should include analyses to identify "what treatment works and what works for whom." In future work, we intend to link intensity and cost of services to outcomes to identify the cost effectiveness of different treatment services. By looking inside the "black box," we hope to gain insights that will assist providers as they devise treatment plans for clients.

I. INTRODUCTION

In 1996, expenditures for the diagnosis and treatment of alcohol and drug abuse reached $12.6 billion, according to one estimate (McKusick et al., 1998). Federal expenditures for substance abuse treatment singularly accounted for almost $2.7 billion of these national expenditures (Office of National Drug Control Policy, 1998). Despite these large outlays, the Department of Health and Human Services estimated that 1.7 million "hardcore" substance abusers, or 48 percent of those most in need of treatment, were not receiving services in 1994, of which one million were estimated to be in need of publicly supported treatment.

Proposals calling for increased public funds to support substance abuse treatment often face intense criticism. Nevertheless, the economic soundness of such policies depends on the cost-effectiveness of treatment. The purpose of this study is to quantify the costs and benefits of alcohol and drug abuse treatment and the resulting economic benefits to society, using data from the National Treatment Improvement Evaluation Study (NTIES).

We used data from NTIES to estimate the crime-related and health care costs associated with substance abusers and the income of substance abusers in the periods before and after treatment. The difference between pre-treatment (baseline) costs and post-treatment (follow-up) costs provides an estimate of the economic impact of substance abuse treatment. This "treatment effect" is viewed as a benefit to the extent that it represents avoided crime-related costs, health-care costs, or welfare payments or increased earnings. In other words, treatment benefits are equal to the additional costs that would have been incurred and the additional earnings that would not have been realized in the absence of treatment.

Overall, our findings indicate modest changes in average health care costs (11% reduction per client) and earnings of substance abusers (9% increase). Moreover, we found essentially no change in welfare payments, unemployment compensation, disability pay, and Supplemental Security Income. However, our results indicate large reductions in crime-related costs, roughly 75 percent. Indeed, over 94 percent of all the benefits of treatment were from crime-related cost reductions. Overall, our results imply that the ratio of benefits to costs for the average client in NTIES was 4.2 to 1 and that the benefits of treatment more than offset treatment costs across a wide range of modalities.

II. METHODOLOGY

In this section, we discuss the methodology used to construct estimates of treatment costs, health-care costs, client income, and crime-related costs. Handling each of these components presented common as well as unique challenges. Therefore, we first discuss some general issues, such as the selection of the sample and necessary adjustments to client responses, and then present a discussion of each component separately. A detailed discussion of the our methodology is provided in Appendix B.

1. SAMPLE SELECTION AND ADJUSTMENTS TO CLIENT RESPONSES

Since the study focuses on costs before and after treatment, all 5,388 NTIES clients who completed an intake and follow-up interview were eligible for inclusion in the analyses. However, because of our interest in identifying treatment effects, we initially decided to exclude clients whose follow-up interview occurred while they were still in treatment. The 144 clients receiving methadone maintenance treatment are a special case, however, because this type of treatment may last for an indefinite period. We, thus, only exclude the responses of clients still in treatment if they were *not* enrolled in a methadone maintenance program. In total, the responses of 124 individuals still in treatment were eliminated from the data set, resulting in a sample size of 5,264 clients.[1] The final sample includes information on 317 clients continuously incarcerated (in jail or prison) for the entire 12-month baseline period and 611 clients incarcerated for most or all of the follow-up period.[2] Appendix A contains a brief description of the NTIES study goals, sampling methods, instrumentation, and program descriptions. A full description of the NTIES appears in *NTIES: Final Report* (1997), produced by NORC.

We used the questions from the intake interview that relate to the experiences and behaviors of clients in the 12 months prior to the interview. Since all intake interviews were completed within three weeks of a client's first treatment session, we refer to this reference period as the pre-treatment period. During the follow-up interview, however, clients were asked about the period since leaving treatment, which varied from client to client. For the 5,264 clients

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[1] This sample of clients differs from the outcome analysis sample used by NORC in the *NTIES: Final Report* (1997). The main difference is that we do not exlude clients who were incarcerated for most or all of either the baseline or follow-up periods, since we wanted our costs to reflect the actual composition of clients in the NTIES data.

[2] An additional 2,438 clients were incarcerated for a portion of the baseline period, and 929 clients were incarcerated for a portion of the follow-up period.

under consideration, the average length of the post-treatment reference period was 309 days (standard deviation of 103 days), roughly 2 months less than the pre-treatment reference period.

To maximize the appropriateness of comparisons across the pre- and post-treatment periods, we "annualized" the responses from the follow-up interview based on the length of a client's post-treatment reference period. To adjust responses, we multiplied each client's responses by 365 days and divided by the length in days of his or her post-treatment reference period. For example, if a client reported being arrested twice at the time of the follow-up interview and the client had been out of treatment for 6 months, the annualized response would be four arrests.[3]

2. THE COST OF TREATMENT

We estimated per diem treatment costs using information from the baseline and continuing administrative survey questionnaires. While both questionnaires included a number of detailed questions about costs, we chose to proxy costs with information on revenues. This decision was based on the large number of incomplete responses to the cost questions and concerns about the reliability of the available responses. Revenue is a poor proxy for cost. For the class of providers covered in NTIES, our estimates likely understate treatment costs. Nevertheless, the revenue questions are familiar from the annual Substance Abuse and Mental Health Administration survey and, thus, we believe are more reliable than the cost data available in the NTIES data.

The cost of a client's index treatment episode was calculated as the product of a client's treatment duration (i.e., treatment episode) and the revenue per day (our proxy for per diem treatment cost) for his/her service delivery unit. We made estimates for all 72 SDUs providing services to clients.

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[3] This simple approach to adjusting responses assumes that the probability of an event (a crime, a visit to a doctor's office, etc.) is uniformly distributed over time, which may not be an accurate characterization of behavior over time. We experimented with a two-step approach modeled after RAND's method for estimating health care expenditures (Newhouse et al., 1981; Duan et al., 1982; Manning et al., 1987; Phelps, 1992; Manning & Marquis, 1996). We found that the two estimation approaches generally yielded only relatively small differences. The simple approach tended to produce higher estimates of health care utilization than the two-step method. Consequently, we believe that the estimated differences in costs are conservative in that the annualization approach may tend to overstate costs in the post-treatment period. See Appendix C for details.

Initially, the 11 individual revenue fields and the total revenue field were inspected for each of the 62 SDUs with information in the baseline administrative survey data file and the 55 units with information in the continuing administrative survey data file. A comparison of the two files revealed that data in the baseline questionnaire were more incomplete and inconsistent than the data in the continuing questionnaire. In particular, for almost half of the units reporting total revenues in the baseline administrative survey, the reported total differed from the sum of the reported detail. However, for almost 90 percent of the units reporting revenue in the continuing administrative questionnaire, there was either no discrepancy, or the discrepancy was less than three percent. Consequently, it was decided to use the continuing survey revenue data for the 55 units for which this data was available. For the other seven SDUs, we used revenue data from the baseline administrative questionnaire.

The calculation of client-day costs from estimated total revenues (as a proxy for costs) requires a measure of average active caseload. We calculated per diem treatment costs by dividing total revenues by client-days (i.e., average active caseload times 365 days). Both the baseline and continuing administrative surveys include information on total admissions, current active caseload, and average active caseload for the reference year.

For each of the eight, non-hospital, non-correctional facilities with no NTIES administrative data, the cost per day per client was assumed to be equal to the weighted average for its modality. Cost per day per client for the one correctional facility with no NTIES administrative data was assumed to be equal to the weighted average for all other correctional treatment programs. The cost per day per client for the one long-term hospital program in the outcomes study, for which there is no NTIES administrative data, was assumed to be equal to the cost per day per client for the one short-term hospital program in the evaluation study.

3. HEALTH CARE COSTS

As one of our measures of the benefits of treatment, we examine changes in client health care utilization. The intake and follow-up questionnaires contained several questions that were useful for measuring clients' health care utilization, and we used the following information:

- Number of hospital inpatient admissions
- Number of medical visits to office-based physicians or clinics

- Number of emergency room visits.[4]

Converting utilization data into health care costs was a straightforward exercise: we first obtained the cost of a night in a hospital, a medical visit, and an ER visit from published sources. We then multiplied these costs by the corresponding number of times clients reported each type of health care utilization. The cost data come from the American Hospital Association's *Hospital Statistics: 1998 Edition* for hospital costs per day, the American Medical Association's *1996 Physician Marketplace Statistics* for the cost of a visit to a physician, and an article in the *New England Journal of Medicine* for the cost of ER visits (Williams, 1996). We used 1994 data when available. When 1994 data were not available, values were converted into 1994 dollars using an appropriate price index.

4. ANNUAL EARNINGS AND SOCIAL WELFARE BENEFITS

The second set of outcomes used to measure treatment benefits includes two components of clients' incomes: earnings and welfare payments. Both the client intake and follow-up questionnaires included questions on current or most recent employment, type of work, rate of pay, hours worked per week, and number of months in the current or last job. Clients were asked to indicate if any wages, salaries, or tips were received during a specified prior time period and, if so, how much. Similar questions were asked on whether clients received welfare or relief, including General Assistance (GA) or Aid to Families with Dependent Children (AFDC). In addition, clients reported information on income from unemployment compensation (UI), disability pay, and/or SSI received. Since UI and disability pay can only be present based on a history of steady employment not typical of this population, these types of payments are assumed to be SSI and are so labeled.

While we used these data to calculate client earnings, welfare payments, and SSI received in the pre- and post-treatment periods, some adjustments were necessary due to incomplete data

[4] While reporting the actual number of nights that the clients had spent in the hospital last year, NTIES only reports the number of medical and ER visits in categories: 1, 2-9, and more than 10. Therefore, we had to impute the average number of times for each category: 5.5 for 2-9 (midpoint of 2 and 9), and 12.5 for 10 or more (midpoint of 10 and 15).

and extreme data values.[5] Appendix E contains detailed information on client annual earnings and welfare benefits.

For earnings, we first inspected all employment-related information for earners reporting very high (legal) earnings (i.e., $100,000 or more) for internal consistency of occupation, reported rate of pay, hours worked per week, duration of longest job held during the reference interval, and the length of the reference interval. Where inconsistencies existed (for example, an income four times greater than the income calculated from information provided by client), we edited the reported income values (see Appendix B for details).

To edit values and impute missing earnings data, we performed regression analysis using client data to estimate the correlation between earnings and client characteristics. The equations that best fit the data trends were used to impute the earnings of clients reporting receipt of earnings but with no reported earnings amount, or whose reported earnings failed the consistency checks. The same procedures were used to edit and impute both baseline and follow-up earnings data, with the addition of client-specific annualization of post-treatment earnings.

Unfortunately, NTIES does not include data (such as state of residence) related to eligibility or benefit levels for GA, AFDC or SSI, making consistency checks very difficult. Inspection of the data revealed only a small number of suspicious outliers. In order to develop imputed welfare and SSI values for non-respondents and outliers, we applied procedures parallel to those used for earnings.

5. CRIME-RELATED COSTS

The last set of factors used to measure treatment benefits are changes in crime-related costs. These costs include direct losses attributable to crimes, such as theft losses, and criminal justice costs. Our estimates for crime-related costs include expenditures for police protection, adjudication and sentencing, and corrections. We also include costs to victims (i.e., property damages, medical costs, and lost wages from work) and theft losses. We calculated an average

[5] Some clients (12%) reported receiving wage (legal) income but refused to provide (or did not know) the amount of income received. In addition, inspection of the data revealed a small number of clients reporting very high (legal) post-treatment earnings (amounts ranging up to $700,000!). Approximately 13 percent of clients at baseline and 15 percent at follow-up reported receipt of welfare but refused to provide (or did not know) the amount of income received. For clients reporting SSI, the non-response rate was below 10 percent.

cost per client for each component using four main data sources: *Justice Expenditure and Expenditures Extracts, 1992*; *Crimes in the United States*; *Criminal Victimization in the United States, 1994*; and *The Corrections Yearbook, 1997*.[6] As in our health care analysis, cost data were obtained for 1994, when available, and, when 1994 data were not available, values were converted into 1994 dollars using an appropriate price index.[7] Appendix F provides greater detail regarding crime-related costs and criminal activity.

We used a two-step process to approximate the per-client cost of police protection. First, separate cost estimates were calculated for each type of crime reported in NTIES by multiplying an estimated cost of police protection per crime by the number of self-reported crimes. Second, we aggregated the costs of police protection across all of the crimes attributed to a respondent to obtain a total cost of police protection per client.

This process required us to estimate separate police costs for each type of crime in NTIES.[8] To obtain estimates of police costs, we used the product of three components: (1) national expenditures for police per arrest; (2) the probability that a reported crime is "cleared" by an arrest; and (3) the percent of crimes reported to police. While national expenditures for police per arrest do not vary by type of crime, the probability of an arrest does and reflects, in part, the resources devoted to investigating a particular crime. The percent of crimes reported to police also varies by type of crime. We used the reporting rates to link the actual number of crimes reported by clients to the number of crimes reported to and investigated by police.

We estimated the costs of adjudication and sentencing by multiplying the number of times a client reported being arrested by the estimated average cost of an arrest. Unfortunately, the intake questionnaire data do not include information on the total number of arrests in the 12 months prior to treatment. Instead, we used the "yes/no" responses indicating whether or not a client had been arrested for a specific crime in the 12 months prior to treatment. If a client reported "yes," we assumed that the client had been arrested once for that crime. We then aggregated across the different crimes to get a total number of arrests. Since it is unknown

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[6] As the full set of data required to calculate the average costs per client for all modalities was not available for a single year in one source, we were forced to pull the data from a variety of sources.

[7] The NTIES interview process was conducted from July 1993 to November 1995 (*NTIES Final Report*, 1997).

[8] While estimating costs for each type of crime complicates the analysis, we wanted our estimates to reflect the level of resources devoted to preventing different types of crimes.

whether a client was arrested more than once, this approach underestimates the number of arrests in the baseline period. Thus, our estimates of crime-related savings are conservative as they may understate the true reductions in crime-related costs.

The average cost of an arrest was obtained by dividing national judicial and legal expenditures by the total number of arrests. This value, however, overstates the adjudication and sentencing costs associated with criminal offenses, since some court costs are incurred for civil and other types of offenses. We decided to approximate the average cost of adjudication and sentencing for criminal offenses by using half of the estimated average cost per arrest.

Corrections' costs consist of separate estimates for time spent in jail and time spent under other forms of supervision, such as parole or probation. We obtained the average per day costs of jail and probation/parole for 1994 from *The Corrections' Yearbook, 1997*. With respect to information on probation/parole, NTIES has two limitations. First, no information is collected on the amount of time respondents spent under probation/parole. Second, the NTIES data do not allow us to identify individuals who may have been on probation/parole during some part of their reference period but who were not under such supervision at the time the intake and follow-up interviews were administered. Any estimate of probation/parole costs will, therefore, underestimate the true costs, because we cannot identify all the respondents who were under this type of supervision. Furthermore, since we do not know how long respondents who are under probation/parole were under supervision, we needed to impose some additional assumptions. To calculate costs for clients under supervision at the time of the intake and follow-up interviews, we assumed that the time spent under probation/parole was 6 months.

We calculated costs to victims as the sum of property damages, medical costs, and lost wages from work and theft losses as the value of property and cash stolen. The average victim cost and theft losses for different crimes were obtained using data from the *1994 Criminal Victimization in the United States*. We then multiplied the average costs to victims and theft losses per crime by the number of self-reported crimes in NTIES and aggregated these losses across different crimes. No victim or theft losses were calculated for the crimes of selling drugs and prostitution. For incidents of shoplifting, only theft losses were calculated.[9]

[9] Information on average theft losses per shoplifting incident was obtained from the *1996 National Retail Security Survey* conducted by the University of Florida. In Appendix B, we report the values used for estimating victim costs and theft losses.

III. FINDINGS

The approach used in this study follows the methodology used in most cost of illness studies (Harwood et al., 1984; Rice et al., 1990). We include both direct costs, such as hospitalization and physician services, and indirect costs, such as crime-related costs and lost earnings. However, the focus of this study is to identify a "treatment effect." We estimated the economic impact of treatment by calculating the difference in costs and income between the pre- and post-treatment periods, and this difference is characterized as a "benefit." No attempt was made to isolate only those costs directly or indirectly caused by substance abuse in either period. Instead, we measured the costs *associated* with substance abusers and compared these costs in the periods before and after treatment to approximate a treatment effect. The differences between pre- and post-treatment costs and the difference between pre- and post-treatment income are viewed as representing the additional costs that would have been incurred and the additional earnings that would not have been realized in the absence of treatment.

In presenting our results, we distinguish between benefits to society and benefits to the non-treated population. The main difference between these two categories is in the treatment of transfers and the income of clients. Transfers are a redistribution of payments or property from one individual to another, such as theft losses or welfare payments. From an economic perspective, such transactions do not have any *direct* affect on the well being of society, and, therefore, theft losses and welfare payments are not included in the calculation of benefits to society.[10] However, theft losses and taxes used to make welfare payments to clients do affect non-treated individuals who are victims of crimes and who pay taxes. Thus, we include theft losses and welfare payments in our calculation of benefits to the non-treated population. Using similar rationale, we include increases in the earnings of clients as a benefit to society, but such changes have no direct affect on the non-treated population and are, therefore, not included in the benefits to the non-treated population.

In the sections below, we report the average costs associated with substance abusers in the periods before and after treatment for all 5,264 clients and then by each modality. The service delivery units in NTIES represent six modalities: short- and long-term inpatient or hospital care; short- and long-term residential care; outpatient methadone care; and non-

[10] Of course, there may be indirect costs that will affect society. For example, while the value of property and cash lost as a result of a theft may not be a cost to society, property damages, lost wages, and medical expenses that occur because of the crime do impose a cost on society. These associated costs of crime are captured in our estimates of the benefits of substance abuse treatment.

methadone outpatient care.[11] In NTIES, short-term care is defined as care where the typical length of stay is less than 2 months. Because long-term hospitals are represented in the data by only one unit and four clients, information on clients receiving this type of care are included in totals but are not displayed separately. Finally, we also present our cost findings by selected client groups.

1. THE COST OF TREATMENT

In Exhibit III-1, we report average treatment costs and average lengths of treatment by modality. Average treatment costs are estimated to be $2,941 per client. Modality-specific averages ranged from $2,051 for ambulatory outpatient (non-methadone) to $4,160 for short-term hospital episodes, a range of over 100 percentage points. Some of the variation in treatment costs is attributable to differences in the average duration of treatment. Treatment provided in a short-term hospital setting was the most costly. The average duration of treatment was also the shortest for this modality. Clients in ambulatory outpatient care experienced the least expensive treatment per episode. However, on a per diem basis, methadone treatment was the least costly.

EXHIBIT III-1
AVERAGE TREATMENT COSTS AND DURATION OF TREATMENT BY MODALITY

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Treatment Costs per Episode	$2,941	$4,160	$2,895	$3,813	$2,575	$2,051
Duration of Treatment in Days	111	12	63	105	263	126

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Exhibits III-2 and III-3 illustrate the distribution of episodes and episode costs, and the average cost per episode across a number of populations and treatment characteristics. To some extent, the gender, race/ethnicity, age and education differences in cost per episode reflect the

[11] These modalities are different than those used by NORC in the *NTIES Final Report* (1997). In their analysis, NORC combined clients in short-term residential and inpatient care and presented the results for these clients under one heading, short-term residential care. NORC proceeded similarly in its treatment of clients in long-term care. In addition, NORC reported results separately for clients in correctional facilities and separated out methadone detoxification clients from those enrolled in a methadone maintenance program, while we do not.

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uneven distribution among modalities of clients with given characteristics. However, differences persist, and are sometimes larger, within single modalities. The variations by treatment characteristics were larger than the variations among gender, race/ethnicity, age and education groups. Again, to some extent, the differences in cost per episode reflect the uneven distribution among modalities of lengths of stay, drug of abuse, and client characteristics. Detailed exhibits are presented in Appendix C on total, average, and percent distribution of episodes and estimated treatment costs, by modality, population characteristics, and drug of abuse.

EXHIBIT III-2
EPISODES AND TREATMENT COSTS BY SELECTED CLIENT CHARACTERISTICS

Population Characteristics	Percent of Episodes	Percent of Treatment Costs	Average Cost Per Treatment Episode
Female	28%	37%	$3,930
Male	72%	63%	$2,559
African-American	55%	37%	$2,777
White, Non-Hispanic	27%	31%	$3,382
Hispanic	15%	13%	$2,717
Less than 21 years old	13%	16%	$3,584
21-30 years old	33%	33%	$2,938
31-40 years old	39%	37%	$2,819
40+ years old	16%	14%	$2,725
High school dropout	44%	44%	$2,909
GED	19%	18%	$2,745
High school graduate	24%	26%	$3,134
Some college	12%	12%	$2,983

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study
Note: Percentages within groups may not add to 100 due to rounding and because percentages and costs are not shown for selected groups consisting of a small number of clients.

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EXHIBIT III-3
EPISODES AND TREATMENT COSTS BY TREATMENT CHARACTERISTICS

Treatment Characteristics	Percent of Episodes	Percent of Treatment Costs	Average Cost Per Treatment Episode
Short-term Hospital	4%	6%	$4,160
Short-term Residential	24%	24%	$2,895
Long-term Residential	31%	40%	$3,813
Outpatient Methadone	8%	7%	$2,575
Ambulatory Outpatient	33%	23%	$2,051
Marijuana only	4%	3%	$2,241
Heroin only	8%	8%	$2,697
Alcohol only	16%	12%	$2,221
Crack/Cocaine only	22%	22%	$2,892
Multiple Drug Use	46%	51%	$3,311
1 month or less of treatment	29%	14%	$1,378
1-2 months	28%	15%	$1,621
3-4 months	18%	17%	$2,783
5 months	6%	13%	$5,848
6 or more months	18%	41%	$6,669

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study
Note: Percentages within groups may not add to 100 due to rounding and because percentages and costs are not shown for selected groups consisting of a small number of clients.

With most health care services, a large part of total treatment costs are attributable to a relatively smaller number of treatment service recipients. If treatment episodes are ranked by cost, we find that treatment episodes with a cost of $1,500 or less accounted for 49 percent of all treatment episodes but only 11 percent of the total cost of treatment. On the other hand, treatment episodes costing more than $6,000 make up only 11 percent of all treatment episodes but account for 49 percent of total treatment costs.

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2. HEALTH CARE COSTS

In this subsection, we report cost estimates for health care utilization, which include costs for hospital stays, visits to physicians and clinics, and emergency room visits. We start by presenting our findings on total health care costs, which include all three components. We then discuss the findings for hospital stays, visits to physicians and clinics, and emergency room visits, separately.

In Exhibit III-4, we report the average annual health care utilization costs for the pre- and post-treatment periods across all types of utilization. The average annual health care costs associated with substance abusers before treatment ranged from $1,606 for substance abusers who received treatment in short-term residential facilities to $2,938 for clients who received treatment in outpatient methadone clinics. After treatment, the average annual health care costs associated with substance abusers ranged from $1,410 (for clients treated in short-term residential settings) to $3,253 (for clients treated in outpatient methadone clinics). Average post-treatment health care costs across all treatment settings were about 11 percent less than average pre-treatment costs. Indeed, health care costs after treatment declined for all treatment settings except for short-term hospitals and outpatient methadone clinics. Health care cost savings were especially large for clients who received treatment in long-term residential facilities; the average decline in health care costs was $753, or 31 percent of pre-treatment health care costs. Reductions were also fairly substantial for clients receiving treatment in short-term residential facilities, averaging $196, or 12 percent of pre-treatment costs. On the other hand, health care costs increased substantially after treatment for clients receiving treatment in short-term hospitals; average health care costs increased by $1335, or 57 percent of pre-treatment costs. Health care costs also rose after treatment for clients who received treatment in outpatient methadone clinics, rising an average of $315, an increase of 11 percent from pre-treatment costs.

EXHIBIT III-4
AVERAGE HEALTH CARE COSTS PER CLIENT BEFORE AND AFTER TREATMENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$2,041	$2,342	$1,606	$2,359	$2,938	$1,794
After	$1,826	$3,677	$1,410	$1,606	$3,253	$1,739
Dollar Change	-$215	$1,335	-$196	-$753	$315	-$55
% Change	-10.5%	57.0%	-12.2%	-31.9%	10.7%	-3.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

The aggregate health care costs reported above mask the movements in costs across the different types of health care utilization. Let us first consider the hospital cost component in more detail. In Exhibit III-5, we report the average annual hospital costs associated with substance abusers receiving treatment, by modality and across all modalities, before and after their substance abuse treatment. Pre-treatment hospital costs ranged from $2,551 for clients treated in outpatient methadone clinics to $1,167 for clients treated in short-term residential facilities. Post-treatment costs ranged from $2,719 for clients treated in outpatient methadone clinics to $1,026 for clients treated in short-term residential facilities. The patterns in the hospital cost data mirror those in the total health care cost data described above. Hospital costs declined for clients treated in all treatment settings except for outpatient methadone clinics and short-term hospitals. Total hospital costs associated with a substance abuser fell by 13 percent, or $200, on average. Substance abusers treated in long-term residential settings experienced the largest declines in hospital costs, averaging $720, or 39 percent of pre-treatment hospital costs. The health care costs associated with clients treated in short-term residential facilities and ambulatory outpatient clinics also fell, by $141, or 12 percent, and $48, or four percent, respectively. In contrast, hospital costs increased substantially for clients treated in short-term hospitals; hospitals costs rose $1,367, or 78 percent. Hospital costs associated with substance abusers treated in outpatient methadone clinics rose by a smaller amount after treatment; post-treatment hospital costs for those treated in outpatient methadone clinics are $168 higher than before treatment, an increase of about seven percent.

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EXHIBIT III-5
AVERAGE HOSPITAL COSTS PER CLIENT BEFORE AND AFTER TREATMENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$1,551	$1,757	$1,167	$1,851	$2,551	$1,271
After	$1,351	$3,123	$1,026	$1,131	$2,719	$1,223
Dollar Change	-$200	$1,367	-$141	-$720	$168	-$48
% Change	-12.9%	77.8%	-12.1%	-38.9%	6.6%	-3.8%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Exhibit III-6 reports the average pre-treatment and post-treatment costs for visits to physicians and clinics associated with substance abusers receiving treatment in various settings. Unlike hospital costs, the average physician visit costs per client rose for all treatment modalities. Pre-treatment physician visit costs ranged from $194 for clients treated in short-term hospitals to $276 for clients treated in ambulatory (non-methadone) outpatient settings. Post-treatment physician visit costs ranged from $224 for clients treated in short-term residential facilities to $365 for clients treated in outpatient methadone clinics. Although higher costs in the follow-up period result in smaller benefits from substance abuse treatment using our approach, it is somewhat misleading to view the increase in visits to physicians as a negative outcome for at least two reasons. First, the increase in visits may have been a factor behind the reduced hospital stays and ER visits. In this sense, the increase in visits to clinics or physicians may have helped to reduce overall health care costs of clients, since, in general, hospital stays and ER visits are more expensive than physician visits. Second, the increase in visits may have resulted in healthier clients, which may have made them more productive.

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EXHIBIT III-6
AVERAGE COSTS OF VISITS TO PHYSICIANS PER CLIENT BEFORE AND AFTER TREATMENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$237	$194	$201	$236	$214	$276
After	$291	$294	$224	$304	$365	$308
Dollar Change	$54	$100	$23	$68	$150	$32
% Change	22.7%	51.6%	11.5%	28.8%	70.2%	11.6%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

In Exhibit III-7, we report the average, annual costs of emergency room (ER) visits per client. Average ER costs associated with substance abusers before treatment ranged from $173 for substance abusers treated in outpatient methadone clinics to $391 for substance abusers treated in short-term hospitals. Post-treatment average ER costs ranged from $170 for clients treated in outpatient methadone clinics to $259 for clients treated in short-term hospitals. Average per client ER costs declined for each treatment modality and fell on average by 27 percent, or $69, per client.

EXHIBIT III-7
AVERAGE COSTS OF EMERGENCY ROOM VISITS PER CLIENT BEFORE AND AFTER TREATMENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$253	$391	$238	$272	$173	$247
After	$184	$259	$159	$171	$170	$208
Dollar Change	-$69	-$131	-$78	-$101	-$3	-$39
% Change	-27.1%	-33.6%	-33.0%	-37.1%	-1.7%	-15.8%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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For descriptive purposes, we report the average health care utilization costs per year for selected client groups in Exhibit III-8. Our findings indicate that health care costs and the percent change in these costs varied across client groups. The underlying causes of these differences are potentially complex and identifying them is beyond this study's scope. The importance of these results, however, is that they indicate that post-treatment reductions in average health care costs were experienced by clients within a large number of selected groups. In fact, average health care costs increased for only three groups of clients: Hispanics, alcoholics, and clients between 31 and 40 years of age.

Let us consider further the findings by race/ethnicity. Before treatment, non-Hispanic White clients had the highest average health care costs, $2,499, while Hispanics had the lowest average health care costs, $1,446. After treatment, average health care costs for African-Americans and non-Hispanic Whites declined by about 14 percent. In contrast, average health care costs for Hispanic respondents increased by almost 19 percent. One possible explanation for these findings is that Hispanics on average were receiving inadequately low health care services prior to treatment and that treatment helped correct this situation. If this explanation is correct, it suggests the importance of being cautious about interpreting an increase in health care costs as a negative outcome

Overall, no matter how we examined the data (by modality or client characteristics), we found reductions in health care costs after treatment. The few exceptions to this trend included physician visit costs and costs for certain groups, such as Hispanics. These findings suggest that one possible indirect benefit of substance abuse treatment may be that it brings previously excluded individuals into the preventative health care system (i.e., physician offices and clinics), thereby reducing their need for relatively more costly acute health care services (i.e., hospital stays and ER visits).

EXHIBIT III-8
TOTAL HEALTH-CARE COSTS BY SELECTED GROUPS

SAMPLE SIZE=5264

Group (Observations)	Before Treatment	After Treatment	% Difference
Male (3795)	$1,787	$1,603	-10.3%
Female (1469)	$2,694	$2,399	-10.9%
African-American (2909)	$2,015	$1,729	-14.2%
White non-Hispanic (1406)	$2,499	$2,148	-14.0%
Hispanic (768)	$1,446	$1,718	18.8%
High school dropout (2467)	$1,967	$1,845	-6.2%
GED (827)	$2,105	$1,929	-8.4%
High school graduate (986)	$1680	$1,258	-25.1%
Some college (984)	$2,530	$2,259	-10.7%
Marijuana only (204)	$995	$953	-4.2%
Crack/cocaine only (1176)	$2,065	$1,902	-7.9%
Heroin only(435)	$2,408	$1,825	-24.2%
Alcohol only (849)	$1,803	$1,946	7.9%
Multiple drug addiction (2469)	$2,136	$1,822	-14.7%
1 month or less of treatment (1547)	$2,267	$2,260	-0.3%
1-2 months (1470)	$1,892	$1,564	-17.3%
3-4 months (963)	$1,794	$1,314	-26.8%
5 months (334)	$1,486	$1,520	2.3%
6 or more months (950)	$2,345	$2,149	-8.3%
Less than 21 years old (677)	$1,566	$1,124	-28.2%
21-30 years old (1725)	$1,837	$1,337	-27.2%
31-40 years old (2041)	$2,059	$2,142	4.0%
40+ years old (821)	$2,811	$2,643	-6.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Note: Total health care costs include the costs of hospital stays, visits to clinics and physicians' offices, and emergency room visits.

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3. ANNUAL EARNINGS AND WELFARE BENEFITS

In this subsection, we report estimates of earnings, welfare benefits, and SSI for the baseline and the follow-up periods. These findings are presented in Exhibits III-9 through III-11 on the following pages. Generally, we find that in the year prior to treatment substance abusers had low rates of employment, low average earnings, paid little in the way of taxes, and had high rates of receipt of the primary social welfare benefits for which they were eligible. For the year after treatment, we find little overall changes in these measures. However, within certain modalities, some of the changes were substantial.

As shown in Exhibit III-9, average earnings increased by nine percent per client, from $3,915 to $4,266. However, in two of the modalities shown, Short-term Residential and Outpatient Methadone, wages decreased around 14 and 12 percent, respectively. Interestingly, increases in earnings were concentrated in one modality, ambulatory outpatient (non-methadone); average earnings per client increased by approximately 44 percent for clients in this modality. There was also a modest increase in average earnings for clients in long-term residential care (12%).

From information on earnings, we also roughly estimated the amount of taxes paid by clients on an aggregate basis. We estimate that the aggregated taxes paid by clients equaled $1.8 million in the pre-treatment period, and increased only slightly to $1.9 million in the follow-up period. On a per client basis, average annual taxes paid by clients changed by $20, from $342 to $362, or roughly six percent per client.[12]

[12] Federal payroll and income taxes are estimated at an aggregate level. First, we excluded earnings less than $5,000 annually per client, since these not subject to Federal income taxes. In addition, we assumed this income to be "off the books" and to yield no payroll taxes. Half of the aggregate earnings total (the taxable aggregate earnings total) is assumed to be subject to payroll and income taxes. FICA taxes were calculated by multiplying the taxable aggregate earnings total by .153 (employee and employer contributions of 15.3 percent). Federal income tax revenues were then calculated in a two step process. First, we calculated the aggregate amount of personal exemptions and deductions (assuming a fixed deduction of $5,000 per respondent) across all respondents and subtracted this amount from the taxable aggregate earnings total. Second, we multiplied this amount by 0.15 (assuming a flat tax rate of 15 percent across all clients) to calculate aggregate Federal tax revenues.

EXHIBIT III-9
AVERAGE EARNINGS PER CLIENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$3,915	$2,561	$6,832	$2,308	$3,193	$3,644
After	$4,266	$2,588	$5,899	$2,576	$2,807	$5,252
Dollar Change	$351	$28	-$934	$268	-$386	$1,608
% Change	9.0%	1.1%	-13.7%	11.6%	-12.1%	44.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

In Exhibit III-10 and Exhibit III-11, we report our findings for welfare payments and SSI by modality. While overall we find small changes in average welfare payments and SSI, we again see large variations in average welfare benefits received by clients across the various modalities. For example, average welfare payments for clients who received treatment in short-term hospitals increased $123, or 19 percent, while little changes occurred in other modalities. Meanwhile, the average change in SSI was over 17 percent for clients in all modalities except for one, long-term residential. Overall, the net change in average welfare benefits (including SSI) across all clients showed dramatic stability.

EXHIBIT III-10
AVERAGE WELFARE PAYMENTS PER CLIENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$724	$635	$349	$749	$1,322	$834
After	$732	$758	$342	$747	$1,285	$859
Dollar Change	$8	$123	-$7	-$2	-$37	$25
% Change	1.1%	19.4%	-2.0%	-0.3%	-2.8%	3.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT III-11
AVERAGE SSI PAYMENTS PER CLIENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Before	$587	$3,091	$386	$318	$863	$603
After	$582	$2,391	$260	$304	$1,014	$742
Dollar Change	-$5	-$700	-$127	-$14	$151	$139
% Change	-0.9%	-22.7%	-32.8%	-4.5%	17.5%	23.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

In Exhibit III-12, we show the percent of clients working and receiving welfare benefits in the periods before and after treatment. The findings show a relatively modest increase in the number of clients participating in the workforce and a modest decrease in the number of respondents receiving welfare and SSI benefits.

EXHIBIT III-12
PERCENT OF CLIENTS WITH EARNINGS AND SOCIAL WELFARE BENEFITS BEFORE AND AFTER TREATMENT

Variable	Earnings	Welfare	SSI
Before	46.9%	35.5%	14.0%
After	50.1%	31.4%	13.0%
% Change	6.8%	-11.3%	-7.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

While we have focused on average measures per client, it is informative to examine the change in earnings per earner and in welfare payments per recipient.[13] As shown in Exhibit III-13, over the pre- and post-treatment interval, average earnings per earner rose a modest two percent, probably less than inflation over the interval. Average welfare benefits and SSI per recipient rose as well. The increase in average welfare and SSI payments offset some of the savings realized through the reduction in the number of recipients.

[13] Clients are considered earners if they received any wage income, and clients are recipients if they received any welfare benefits.

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EXHIBIT III-13
AVERAGE ANNUAL EARNINGS AND SOCIAL WELFARE BENEFITS BEFORE AND AFTER TREATMENT

Variable	Earnings per Earner	Welfare Per Recipient	SSI Per Recipient
Before	$8,343	$2,040	$4,246
After	$8,510	$2,330	$4,482
Dollar Change	$167	$290	$236
% Change	2.0%	14.2%	5.6%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

There is little difference in the demographic characteristics of the population as regards to earnings or social welfare benefits after treatment compared to before treatment. Underlying the relatively small changes in average earnings and social welfare benefits are substantial changes in the earnings and welfare benefits of individual clients. Thirty percent (1,575) of the total sample of 5,264 clients experienced an increase of over $1,000 in annual earnings after treatment, and 23 percent, or 1,234, experienced a decrease of over $1,000 in annual earnings after treatment. About 900 clients with no earnings in the pre-treatment period reported employment after treatment. On the other hand, 730 clients reporting employment before treatment reported no employment afterwards.

Welfare receipts displayed somewhat more stability: about the same number of clients reported an increase as reported a decrease in welfare after treatment (913 and 907) and about 600 reported a change of less than $500 per year. Some 765 clients with welfare benefits prior to treatment reported no welfare receipt after treatment. On the other hand, 551 clients reporting no receipt of welfare benefits before treatment reported receiving them afterwards.

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EXHIBIT III-14
EARNINGS AND SOCIAL WELFARE BENEFITS BEFORE AND AFTER TREATMENT

	ONLY RECEIVED BEFORE	ONLY RECEIVED AFTER	RECEIVED BOTH BEFORE AND AFTER	AMOUNT INCREASED	AMOUNT DECREASED	AMOUNT STABLE
Number of Clients						
Earnings	730	899	1740	1575	1234	560
Welfare	765	551	1102	913	907	598
SSI	382	327	356	443	473	149
Percent of Sample						
Earnings	13.9%	17.1%	33.1%	29.9%	23.4%	10.6%
Welfare	14.5%	10.5%	20.9%	17.3%	17.2%	11.4%
SSI	7.3%	6.2%	6.8%	8.4%	9.0%	2.8%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study
Note: Persons reported as "Amount Stable" experienced a change of less than $1,000 in earnings or a change of less than $500 in welfare or SSI.

Overall, our results indicate modest changes in earnings and little changes in social welfare payments made to clients. These overall results, however, mask substantial variation across modalities. Improvements in earnings and reduced reliance on social welfare benefits may result from a wide range of factors: characteristics of the treatment episode, such as modality and duration; severity and stage of an individual's substance abuse problem; and those demographic factors affecting employability, probable rate of pay, and welfare eligibility. The association of dramatic improvements in earnings within a particular modality may reflect the suitability of that modality for early intervention, less severe problems of substance abuse, or clients with higher potential employability, rather than some inherent attribute of the modality. One possible explanation for the increase in welfare payments shown in Exhibit III-14 is that clients may regain custody of their children thereby making them eligible for welfare. For a clearer understanding of the observed outcomes, additional analyses of the NTIES data are necessary.

4. CRIME-RELATED COSTS

In this subsection, we report estimates of the crime-related costs of substance abusers in the periods prior to treatment and after treatment. Both costs to society and costs to the non-treated population are reported. The costs to society include the costs of police protection,

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adjudication and sentencing, corrections, and costs to victims. Losses to the non-treated population include theft losses and all the other costs noted above.

In Exhibit III-15, we report the average costs (in 1994 dollars) in the year prior to treatment and in the year after treatment, the dollar difference, and the percent difference between the 2 years.[14] Overall, the findings indicate that, on average, clients were associated with large crime-related costs in the year before treatment. The first row in Exhibit III-15 shows annual costs to society in the period before treatment. We estimate that the average, annual crime-related costs to society per client were $11,462 in the period before treatment. These average pre-treatment costs ranged from a low of $6,901 for clients receiving short-term hospital care to a high of $16,335 for clients receiving long-term residential care.

The average costs to the non-treated population per client were $16,386 across all modalities. Again, the costs associated with clients receiving short-term hospital care were lowest ($8,613), while the costs associated with clients receiving long-term residential care were highest ($24,014). The differences between the costs to society and costs to the non-treated population reflect the average value of theft losses per client. These theft losses averaged $4,924 (i.e., $16,386 - $11,462) per client across all modalities in the pre-treatment period.

On average, the crime-related costs to society fell by $8,611 per client. This decrease in costs corresponds to a 75 percent reduction in crime-related costs relative to the equivalent costs in the pre-treatment period and is viewed as a benefit to society in that it represents avoided crime-related costs.

For all modalities, the findings indicate large reductions in the crime-related costs to society after treatment. The greatest average dollar reductions were for clients receiving treatment in long-term residential facilities, with an average benefit to society of $12,881. This is equivalent to a 79 percent reduction in crime-related costs. This result may not be surprising considering that the costs associated with clients in long-term residential care were also the highest. However, the percent reduction was equally large for short-term residential care, also 79 percent. Indeed, clients receiving treatment in residential facilities experienced the largest

[14] As described in the methodology section, the dollar figures are based on the average number of self-reported crimes and arrests, and the time spent in jail and under probation/parole. We performed t-tests to check if pre- and post-treatment values for these variables differ significantly between the two periods. These tests revealed statistically significant differences in crimes, arrests, jail time, and the number of clients under probation or parole between the two periods. These results are reported in Appendix F.

EXHIBIT III-15
AVERAGE CRIME-RELATED COSTS PER CLIENT BEFORE AND AFTER TREATMENT

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residentiall (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
	Average Cost to Society per Client					
Before	$11,462	$6,901	$10,969	$16,335	$8,993	$8,520
After	$2,851	$3,047	$2,278	$3,454	$3,033	$2,553
Dollar Change	-$8,611	-$3,854	-$8,692	-$12,881	-$5,960	-$5,967
% Change	-75.1%	-55.8%	-79.2%	-78.9%	-66.3%	-70.0%
	Cost to the Non-treated Population					
Before	$16,386	$8,613	$15,040	$24,014	$17,582	$10,935
After	$4,121	$4,009	$2,996	$5,385	$4,576	$3,540
Dollar Change	-$12,265	-$4,603	-$12,044	-$18,629	-$13,006	-$7,395
% Change	-74.9%	-53.4%	-80.1%	-77.6%	-74.0%	-67.6%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

treatment effects on average. Clients receiving short-term hospital care were associated with the smallest decrease in crime-related costs on a dollar and percent basis. However, even for clients in short-term hospital care crime-related costs dropped by roughly 56 percent.

The benefits to the non-treated population follow a similar pattern to the costs to society but were larger because of the inclusion of theft losses. Overall, on a per client basis, we estimate that the benefits to non-treated individuals were $12,265 or 75 percent of pre-treatment costs. On both a percentage and dollar basis, clients receiving short-term hospitals are associated, on average, with the smallest reduction in crime-related costs.

In Exhibit III-16, we present the individual components that make up the crime-related costs reported in Exhibit III-15 Costs to society include the costs associated with police protection, adjudication and sentencing, jail, probation/parole, and losses incurred by victims (property damage, medical expenses, and lost pay due to time missed from work). The last component shown in Exhibit III-16, theft losses, are only included in the costs to the non-treated population.

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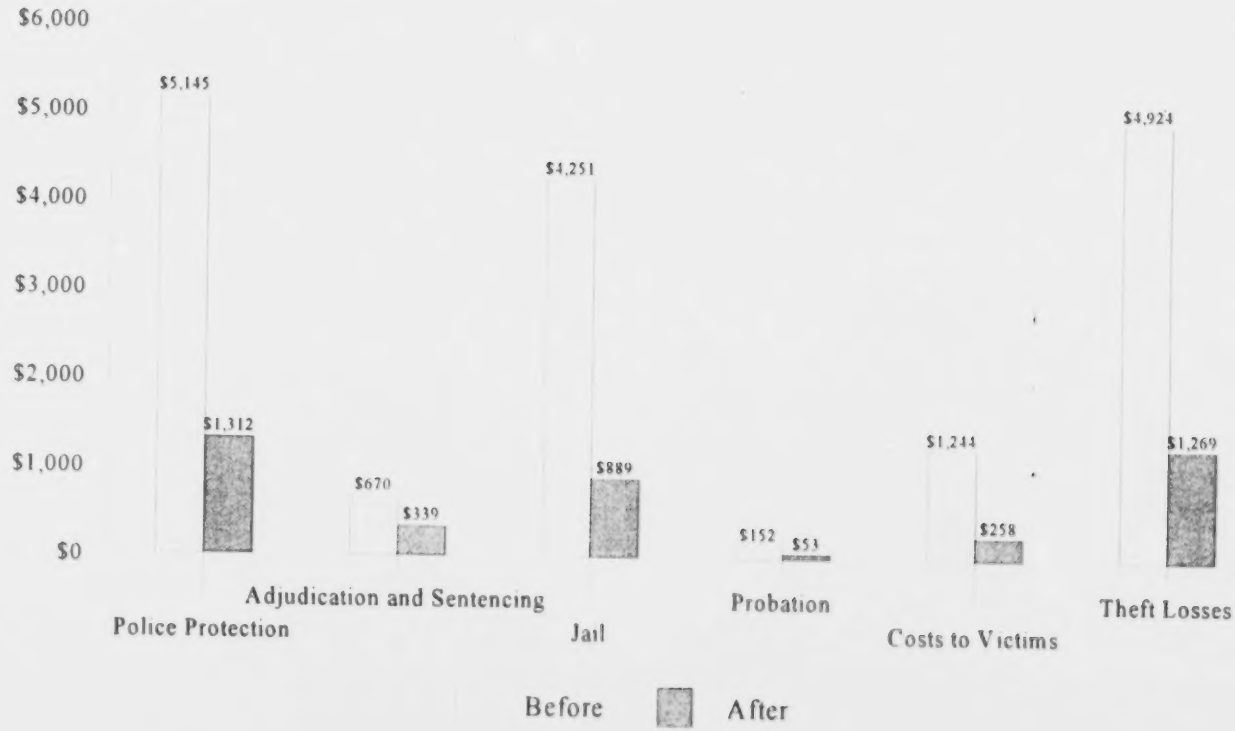
EXHIBIT III-16
CRIME-RELATED COSTS BEFORE AND AFTER TREATMENT



The largest component of crime-related costs in the pre- and post-treatment periods was the cost of police protection. These costs accounted for roughly 31 and 32 percent of the costs to the non-treated population in the periods before and after treatment, respectively. Theft losses also accounted for a significant share of crime-related costs, which were almost 30 and 31 percent of pre-treatment and post-treatment costs. The cost difference between before and after treatment was also greatest for police protection, and equals over $3,800.

In Exhibit III-17, we report the average crime-related costs to society for selected groups before treatment and after treatment and the percent difference between the two. These findings are offered as additional descriptors of the crime-related costs associated with the study population. The results are reported by gender, race/ethnicity, education level, drug abused, length of treatment, and age level.

The important finding from Exhibit III-17 is that crime-related costs decreased by more than 70 percent for almost all client groups. Clients less than 21 years old were the most costly in both the pre- and post-treatment periods. This cohort also showed the smallest percent reduction in crime-related costs. The least costly groups included clients with some type of college degree and clients over the age of 40. Interestingly, these two groups also demonstrated some of the largest percent reductions in costs.

EXHIBIT III-17
AVERAGE CRIME-RELATED COSTS TO SOCIETY BY SELECTED GROUPS

SAMPLE SIZE=5264

Group (Observations)	Before Treatment	After Treatment	% Difference
Male (3795)	$13,158	$3,122	-76.3%
Female (1469)	$7,188	$2,152	-70.1%
African-American (2909)	$9,642	$2,333	-75.8%
White Non-Hispanic (1406)	$13,277	$3,211	-75.8%
Hispanic (768)	$14,157	$3,717	-73.7%
High school dropout (2467)	$14,033	$3,669	-73.9%
GED (827)	$11,614	$2,676	-77.0%
High school graduate (986)	$8,345	$1,986	-76.2%
Some College (984)	$8,172	$1,818	-77.8%
Marijuana only (204)	$14,419	$4,029	-72.1%
Crack/Cocaine only (1176)	$8,488	$2,224	-73.8%
Heroin only(435)	$10,406	$2,963	-71.5%
Alcohol only (849)	$7,351	$2,008	-72.7%
Multiple drug addiction (2469)	$14,073	$3,318	-76.4%
1 month or less of treatment (1547)	$9,983	$3,126	-68.7%
1-2 months (1470)	$12,622	$3,237	-74.4%
3-4 months (963)	$12,798	$3,144	-75.4%
5 months (334)	$9,905	$1,536	-84.5%
6 or more months (950)	$11,435	$1,973	-82.7%
Less than 21 years old (677)	$26,271	$7,186	-72.6%
21-30 years old (1725)	$11,636	$2,685	-76.9%
31-40 years old (2041)	$8,325	$2,091	-74.9%
40+ years old (821)	$6,873	$1,518	-77.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study
Note: The cost to society reflect the cost of police protection, adjudication and sentencing, corrections (jail, parole, probation), and victim cost but do not include theft losses.

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5. AGGREGATE COSTS AND BENEFITS OF SUBSTANCE ABUSE TREATMENT

Having reviewed the individual components separately, in this subsection we present the study's main results: the aggregate benefits to society and to the non-treated population of substance abuse treatment. By this point, it should be clear that we find significant benefits of substance abuse treatment for the clients in NTIES. Most of these benefits were derived from the reductions in crime-related costs. In fact, the benefits from reduced crime are estimated to be enough to offset the cost of treatment by themselves. In Exhibit III-18, we report findings with respect to the total benefits of substance abuse treatment to society and the non-treated population in terms of health care costs, earnings, welfare, SSI, and crime-related costs. Overall, we estimate that treatment created an average benefit to society of $9,177 per client and an average benefit to the non-treated population of $12,477 per client. Reductions in crime-related costs accounted for roughly 94 and 98 of total benefits to society and the non-treated population, respectively. By deducting the average cost of treatment per client per episode ($2,491), we estimate that *net* treatment benefits averaged $6,236 and $9,536 per client for society and the non-treated population, respectively.

The results in Exhibit III-18 imply that the ratio of benefits to costs was 3.1 to 1 for society and 4.2 to 1 for the non-treated population. Therefore, for the sampled clients in NTIES, every dollar spent on treatment returned a benefit of slightly more than three dollars to society, or, alternatively, slightly more than four dollars to the non-treated population.

In Exhibit III-19, we demonstrate the variation in net benefits by modality. Net benefits to society ranged from a low of -$1,613 for short-term hospital settings to $10,089 for long-term residential settings. Average benefits to the non-treated population were also lowest for short-term hospital care (-$315) and highest for long-term residential care ($15,585). The benefits to costs ratio (using the benefits to society) varied across modalities and ranged from 0.6 to 1 (for treatment provided in a short-term hospital setting) to 3.7 to 1 (for non-methadone outpatient care). Our results for treatment provided in a short-term hospital setting indicate that, on average, the cost of treatment exceeded the benefits. Nevertheless, our results generally indicate that treatment was cost effective across a wide range of modalities; that is, the economic benefits from substance abuse treatment exceeded the direct costs.

EXHIBIT III-18
AVERAGE PER CLIENT BENEFITS OF SUBSTANCE ABUSE TREATMENT

	(A) Before Treatment	(B) After Treatment	(A-B) Benefits to Society	(A-B) Benefits to Non-treated Population
Average Health Care Costs per Client	$2,040	$1,826	$215	$215
Average Earnings per Client	$3,915	$4,266	$351	NA
Average Welfare Payments per Client	$724	$732	NA	-$8
Average SSI Payments per Client	$587	$582	NA	$5
Average Crime-related Costs to Society per Client	$11,462	$2,851	$8,611	$8,611
Average Theft Losses	$4,924	$1,270	NA	$3,654
Total Benefits per Client			$9,177	$12,477
Average Treatment Costs per Episode			$2,941	$2,941
Net Benefits per Client			$6,236	$9,536

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT III-19
AVERAGE BENEFITS OF SUBSTANCE ABUSE TREATMENT BY MODALITY

	Total	Short-term Hospital	Short-term Residential	Long-term Residential	Outpatient Methadone	Ambulatory Outpatient
	Average per Client Benefits to Society					
Total Benefits	$9,177	$2,547	$7,954	$13,902	$5,259	$7,630
Treatment Costs	$2,941	$4,160	$2,895	$3,813	$2,575	$2,051
Net Benefits	$6,236	-$1,613	$5,059	$10,089	$2,684	$5,579
Benefits to Costs Ratio	3.1	0.6	2.7	3.6	2.0	3.7
	Average per Client Benefits to the Non-treated Population					
Total Benefits	$12,477	$3,845	$12,374	$19,398	$12,577	$7,286
Treatment Costs	$2,941	$4,160	$2,895	$3,813	$2,575	$2,051
Net Benefits	$9,536	-$315	$9,479	$15,585	$10,002	$5,235
Benefits to Costs Ratio	4.2	0.9	4.3	5.1	4.9	3.6

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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IV. Conclusions and Implications for Research, Policy, and Practice

The purpose of this study was to provide estimates of the costs and benefits associated with substance abuse treatment using data from the National Treatment Improvement Evaluation Study. We examined the criminal activity, health care utilization, and income of clients in the periods before and after treatment. This study contributes to a growing body of literature that suggests that the benefits of substance abuse treatment exceed the costs.[15]

The reductions in average crime-related costs were roughly 75 percent between the year prior to treatment to the year after treatment and can account for over 94 percent of the benefits of treatment. Post-treatment health care costs across all modalities were about 11 percent less than average pre-treatment costs. With respect to client income, we found modest increases in average earnings per client; the earning of workers increased minimally, but more clients were working so that the overall effect was a nine percent increase in average earnings per client. The findings also indicate that welfare and SSI payments moved in opposite directions and offset each other, with a 1.1 percent increase in average welfare payments and a 0.9 percent reduction in average SSI payments.

Overall, our findings indicate that the ratio of benefits to treatment costs was 3.1 to 1 for society and 4.2 to 1 for the non-treated population. It is important to note that these ratios do not include any benefits accrued while clients were still in treatment and, therefore, may understate total economic benefits. However, a number of clients in NTIES received additional treatment services after ending the index treatment episode and prior to completion of the follow-up questionnaire. Since we have not accounted for the cost of this additional treatment, our ratios are overstated for those clients receiving additional treatment. In the future work, we intend to explore this issue further and examine the impact such treatment has on our estimated benefit to cost ratios.

We have done some illustrative calculations, based on the assumptions that the NTIES sample population is representative of the CSAT-supported treatment population and that the sample service delivery units are representative in costs, services, and efficacy of facilities receiving support from CSAT. Using our estimates of health care costs, earnings, welfare and

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[15] For example, see the April 1994 report for the California Department of Alcohol and Drug Programs entitled *Evaluating Recovery Services: California Drug and Alcohol Treatment Assessment (CALDATA)*, which reported an overall seven to one ration of benefits to treatment costs.

SSI payments, and crime-related costs by modality, we constructed estimates of total costs for the population of individuals receiving treatment in CSAT-funded programs. Our approach to estimating these costs involved two steps.

First, we calculated an estimate of the number of substance abusers receiving federally supported treatment. To do this we used the number of individuals receiving treatment with funding from the Substance Abuse and Mental Health Services Administration in 1994, which was estimated to be 341,523 (Office of National Drug Control Policy, 1998). Using national estimates of the distribution of substance abusers by treatment modality, we allocated the 341,523 clients into different modalities. Second, we multiplied our average per client values by the estimated total number of clients in each modality. For costs associated with clients receiving long-term hospital care, however, we used estimates based on average costs per client in long-term residential care. We proceeded this way because cost estimates for clients in long-term hospital care are based on the responses of only four clients and, therefore, are of questionable quality. The overall findings from this exercise are summarized in Exhibit IV-1.

EXHIBIT IV-1
PROJECTED BENEFITS FROM PUBLICLY SUPPORTED TREATMENT (N=341,523)

	Before Treatment	After Treatment	Benefits to Society	Benefits to Non-treated Population
Health Care Costs	$678,157,153	$653,207,804	$24,949,350	$24,949,350
Earnings	$1,166,446,184	$1,550,042,800	$383,596,616	NA
Welfare Payments	$289,558,182	$294,667,254	NA	-$5,109,073
SSI Payments	$207,677,778	$243,936,919	NA	-$36,259,141
Crime-related Costs to Society	$3,215,754,637	$922,233,157	$2,293,521,480	$2,293,521,480
Theft Losses	$1,262,861,090	$390,149,726	NA	$872,711,364
Total Benefits			$2,702,067,445	$3,149,813,980
Treatment Costs			$1,004,419,143	$1,004,419,143
Net Benefits			$1,697,648,302	$2,145,394,837

Source: Authors' calculations based on estimates from the NTIES analysis
Projected benefits are for the 341,523 clients estimated to have received CSAT-supported substance abuse treatment in 1994.
NA= not applicable.

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This example demonstrates that the potential benefits to society and to the non-treated population from treatment supported by CSAT may have reached almost $1.7 billion and 2.1 billion in 1994, respectively. The majority of the projected benefits are accounted for by the estimated reduction in crime-related costs. However, almost 17 percent of the projected benefits to society are from increased earnings.

Such findings are provocative, but these results are based on the findings for a selective group of SDUs that received CSAT-demonstration grants. The purposive sample of SDUs in NTIES may be different than typical treatment programs in the types and quality of services provided, cost structures, and the types of clients treated. It is unknown, therefore, whether or not the results found in this study would also be found in a more representative sample of SDUs and clients Additional analyses in this respect would be informative to help identify how and if our findings would differ for a more representative sample of treatment programs.

Nevertheless, our results do indicate that society and the non-treated population benefit from substance abuse treatment provided to critical populations, such as those supported by the CSAT-demonstration grants and represented in NTIES. In these instances, we find that the cost of treatment is more than offset by the reductions in crime-related and health-care costs, and increased earnings. For policy makers who often face the difficult task of justifying to taxpayers the use of public funds to support treatment, our findings lend support to the argument that such programs can create benefits to society that justify the expenditures. While a significant share of these benefits were due to reductions in crime-related costs, our estimates did not take into account the adverse psychological effects of crime that impose an enormous cost on society. Because of the apparent effectiveness of treatment in reducing criminal activity, treatment targeted to criminal offenders either as an alternative to incarceration or while in prison would seem to hold the potential for significantly improving societal welfare.

Our study also points to a number of interesting areas for future treatment research. While our findings suggest that treatment costs and the economic benefits of treatment vary across different client groups, a more detailed analysis of how the ratio of benefits to costs varies with client characteristics could be useful in at least two respects. First, it may help us refine the relationships identified in our more aggregate analysis. For example, differentiating between those clients who complete treatment and those who do not should clarify the relationship between length of stay and treatment outcomes. Second, a more detailed analysis may suggest how economic benefits of treatment could be maximized by identifying groups who either

respond well to treatment or who may require additional resources to bring about successful outcomes.

In future work, we also intend on linking intensity of treatment services to outcomes to identify the cost effectiveness of different treatment services. The treatment community generally believes that more intensive and costlier treatment results in improved outcomes. At the same time, treatment programs are being expected to produce the same outcomes with increasingly limited resources. Treatment programs need to know how to structure treatment programs that produce the desired outcomes at the lowest possible costs. Our next step will include identifying the relationships between the economic benefits measured in this study and length of stay, number of treatment services, and other measures of treatment intensity. We can then compare the marginal impacts of measures of intensity with their associated unit costs to identify the cost effectiveness of increasing treatment intensity.

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APPENDIX A
DESCRIPTION OF THE NATIONAL TREATMENT IMPROVEMENT EVALUATION STUDY AND CENTER FOR SUBSTANCE ABUSE TREATMENT DEMONSTRATIONS (1990-1992)

APPENDIX A:
DESCRIPTION OF THE NATIONAL TREATMENT IMPROVEMENT EVALUATION STUDY AND CENTER FOR SUBSTANCE ABUSE TREATMENT DEMONSTRATIONS (1990-1992)

The National Treatment Improvement Evaluation Study (NTIES) was a national evaluation of the effectiveness of substance abuse treatment services delivered in comprehensive treatment demonstration programs supported by the Center for Substance Abuse Treatment (CSAT). The NTIES project collected longitudinal data between FY 1992 and FY 1995 on a purposive sample of clients in treatment programs receiving demonstration grant funding from CSAT. Client-level data were obtained at treatment intake, at treatment exit, and 12 months after treatment exit. Service delivery unit (SDU) administrative and clinician (SDU staff) data were obtained at two time points, 1 year apart.

1. THE NTIES DESIGN

The NTIES study design had two levels—an administrative or services component and a clinical treatment outcomes component.

1.1 The Administrative/Services Component

This study component was designed to assess how CSAT demonstration funds were used, what improvements in services were implemented at the program level, and what kind and how many programs and clients were affected by the demonstration awards. Four data collection instruments were used to gather administrative/services data: the NTIES Baseline Administration Report (NBAR), the NTIES Continuing Administrative Report (NCAR), the NTIES Exit Log, and the NTIES Clinician Form (NCF).

The unit of analysis for the administrative component was the SDU, defined by CSAT as a single site offering a single level of care. The classification of *level of care* is based on three parameters: (1) facility type (e.g., hospital, etc.); (2) intensity of care (e.g., 24-hour, etc.); and (3) type of service (e.g., outpatient, etc.). An SDU could be a stand-alone treatment provider or it could be one component of a multi-tiered treatment organization. For example, a large county mental health agency may be the *organization* within which the SDU is located. The organization may have multiple substance abuse treatment components, such as a county hospital and a county (ambulatory) mental health center. The county hospital may have multiple SDUs, such as an inpatient detoxification service, an outpatient counseling service, and a hospital

satellite center providing transitional care. In summary, the SDU provided NTIES evaluators with a stable, uniform level of comparison for examining service delivery issues.
his is one of four instruments developed for administrative data collection

A range of key clinician-specific data elements (within the administrative component) were assessed using the NTIES Clinician Form (NCF). The NCF items were an important adjunct to the facility- (SDU) level instruments; these items assessed clinician training, experience, client exposure, and service provision, and were completed by all counseling and clinical (medical and therapeutic) staff at the individual SDUs.

1.2 Clinical Treatment Outcomes Component

The unit of analysis for the clinical treatment outcomes component was individual client data. NTIES measured the clinical outcomes of treatment primarily through a "before/after" or "pre- to post-treatment" design. This method compares behaviors or other individual characteristics in the same participants, measured in similar ways, before and after an intervention.

Information about clients' lives for the *before* period were obtained from the NTIES Research Intake Questionnaire (NRIQ), which was administered sometime during the clients' first 3 weeks of treatment. The specific areas assessed included:

- Drug and alcohol use
- Employment
- Criminal justice involvement and criminal behaviors
- Living arrangements
- Mental and physical health.

Information about clients' lives for the *after* period were obtained from the NTIES Post-discharge Assessment Questionnaire (NPAQ), with the same areas assessed at roughly 12 months post-treatment. Other client data sources included a treatment discharge interview (NTIES Treatment Experience Questionnaire, NTEQ), abstracted client records, urine drug screens collected at the time of the follow-up interview, and arrest reports from state databases.

1.3 The Outcome Analysis Sample

Between August 1993 and October 1994, research staff successfully enrolled 6,593 clients at 71 SDUs to participate in three waves of an in-person, computer-assisted data collection protocol. These SDUs were chosen from the universe of treatment units receiving demonstration grant funding from CSAT. Some of the selected facilities were wholly supported by CSAT awards, while others received only indirect support or none.

Clients were interviewed at admission to treatment, when they left treatment, and then at 12 months after the end of treatment. Less than 10 percent of the recruited clients refused or avoided participation, and more than 83 percent of the recruited individuals (5,388 clients) completed a follow-up interview. Additional sample exclusions included:

- Missing or undetermined treatment exit date
- Inappropriate length of follow-up interval (less than 5 or more than 16 months)
- Clients incarcerated for most or all of the follow-up period.

The additional sample exclusions resulted in a final outcome analysis sample of 4,411 individuals.

2. TREATMENT DEMONSTRATION PROGRAMS

CSAT initiated three major demonstration programs and made 157 multi-year treatment enhancement awards across 47 states and several territories during 1990 through 1992. One objective common to all demonstrations was CSAT's emphasis on the provision of "comprehensive treatment" services to targeted client populations. The recipients of these awards focused special attention on the substance abuse treatment service needs of minority and special populations located primarily within large metropolitan areas. The demonstration programs are briefly described below.

2.1 Target Cities

Under this demonstration, nine metropolitan areas were selected to receive awards, of which half were included in the NTIES purposive sample. The following treatment improvement activities were explicitly provided for in the awards:

- Establishment of a Central Intake Unit (CIU) with automated client tracking and referral systems in place
- Provision of comprehensive services, including vocational, educational, biological, psychological, informational, and lifestyle components
- Improved inter-agency coordination (e.g., mental health, criminal justice, and human service agencies)
- Services for special populations—adolescents, pregnant and postpartum women, racial and ethnic minorities, and public housing residents.

2.2 Critical Populations

Under this demonstration program, awardees were required to implement "model enhancements" to existing treatment services for one or more of the following critical populations: racial and ethnic minorities, residents of public housing, and/or adolescents. Special emphasis was given to services provided to the homeless, the dually diagnosed, or persons living in rural areas. A total of 130 grants were awarded, covering services such as vocational support/counseling, housing assistance, integrated mental health and/or medical services, coordinated social services, culturally directed services, and others.

2.3 Incarcerated and Non-Incarcerated Criminal Justice Populations

Under this demonstration program, funds were directed toward improving the standard of comprehensive treatment services for criminally involved clients in correctional and other settings. Some program emphasis was placed on ethnic and/or racial minorities. Nine Correctional Setting demonstrations were funded: five in prisons, three in local jails, and one across a network of juvenile detention facilities. All projects included a screening component to identify substance-abusing inmates, a variety of targeted treatment interventions (e.g., therapeutic communities, intensive day treatment programs), and a substantial aftercare component.

A total of 10 non-incarcerated projects were funded. Five programs targeted interventions at clients in diversionary programs, three focused services on probationers or parolees, and two programs targeted both populations. Almost all of the funded demonstration projects included the following components:

- Basic eligibility determination, followed by systematic screening and assessment
- Referral to treatment
- Graduated sanctions and incentives while in treatment
- Intensive supervision in treatment
- Community-based aftercare with supervision and service coordination:

In total, 19 criminal justice projects were funded as part of the CSAT 1990-1992 demonstrations, and as indicated in the next section, these projects were purposively over-sampled in order to obtain a more robust evaluation of this program.

3. DESCRIPTION OF SDUs AND CLIENTS BY TREATMENT MODALITY AND PROGRAM TYPE

The 71 SDUs contributing clients to the outcome analysis sample are characterized by modality and (demonstration) program type in Exhibit A-1. Among the 698 SDUs in the NTIES universe: 52 percent (n=365) were Target Cities programs, 39 percent (n=274) were Critical Populations programs, and 9 percent (n=59) were Criminal Justice programs.

In terms of the SDUs sampled for the NTIES outcome analysis, 44 percent were Target Cities programs, 38 percent were Critical Populations programs, and 23 percent were Criminal Justice programs. Criminal Justice SDUs were purposely over-sampled as part of the NTIES evaluation design (CSAT, 1997). Nearly half of the sampled SDUs were (non-methadone) outpatient programs, and about one-quarter were long-term residential programs.

EXHIBIT A-1
SDUs IN THE OUTCOME ANALYSIS SAMPLE

Program Title Number of SDUs (% of NTIES Universe)[16]	NTIES Sample	Methadone	Outpatient	Long-Term Residential	Short-Term Residential	Correctional
Target Cities n=365 (52%)	31 (44%)	6	15	6	4	0
Critical Populations n=274 (39%)	27 (38%)	1	13	10	3	0
Criminal Justice n=59 (9%)	13 (23%)	0	5	0	0	8
Totals N=698 (100%)	71 (100%)	7	33	16	7	8

As shown in Exhibit A-2, 59 percent of all NTIES clients were sampled from Target Cities SDUs. Slightly over 21 percent of all NTIES clients were sampled from Critical Populations SDUs and 20 percent were sampled from Criminal Justice SDUs. Outpatient (non-methadone) SDUs treated over one-third (35%) of the clients in the outcomes analysis sample, and almost 80 percent of these were sampled from Target Cities programs.

EXHIBIT A-2
DISTRIBUTION OF CLIENTS IN THE OUTCOMES ANALYSIS SAMPLE

Program Title Number of Clients (% of Analysis Sample)	Methadone	Outpatient	Long-Term Residential	Short-Term Residential	Correctional
Target Cities n=2,600 (59%)	377 (89%)	1,214 (78%)	504 (60%)	505 (58%)	0
Critical Populations n=931 (21%)	45 (11%)	220 (14%)	298 (35%)	368 (42%)	0
Criminal Justice n=880 (20%)	0	132 (8%)	39 (5%)	0	709 (100%)
Totals n=4,411 (100%)	422	1,566	841	873	709

[16] The original NTIES universe of SDUs included a program type called *Specialized Services*. Because clients for the outcome analysis sample were not drawn from these SDUs (n=94), they are excluded from the Exhibit.

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Readers who are interested in more detailed information about the NTIES project are invited to visit the NEDS Web site at: **http://neds.calib.com**. The NEDS Web site provides the full-length version of the NTIES Final Report (1997), as well as copies of all data collection instruments employed in NTIES.

APPENDIX B
COST METHODOLOGY

APPENDIX B
COST METHODOLOGY

In this appendix, we provide additional information on the methodology used to construct estimates of treatment costs, health-care costs, client income, and crime-related costs.

1. THE COST OF TREATMENT

1.1 Cost and Revenue Data Quality

The administrative questionnaire included a large number of very detailed inquiries about service delivery unit costs, with responses of questionable quality. The very simple series of revenue questions, similar to those in UFDS (formerly NDATUS), were used instead as a proxy for costs. The revenue questions are familiar from the annual Substance Abuse and Mental Health Services Administration (SAMHSA) survey, and a facility that had difficulty with or was unwilling to answer revenue questions seemed highly unlikely to have provided reliable data on costs.

Initially, the 11 individual revenue fields and the total revenue field, were inspected for each of the 62 units in the baseline administrative survey data file and the 55 units in the continuing administrative survey data file. Comparison of the two files showed the following:

In the baseline survey, 3 units did not respond or reported all zeros to the revenue questions, 4 units did not respond or reported zero total revenue but reported some CSAT funds, and another 4 did not respond or reported zero total revenue but reported funds from various sources. For almost half (23) of the 50 units reporting total revenues, the reported total differed from the sum of the reported detail. In other words, the revenue data for only 44 percent of units passed a simple add-check procedure.

In the continuing administrative survey, all units responded to revenue questions, all units provided a total, and for 70 percent of the units (39) the reported total exactly equaled the sum of the reported detail. For almost 90 percent of the units (48) there was either no discrepancy, or the discrepancy was less than three percent.

1.2 Decision Rules for Cost/Revenue Estimates

It was decided to use continuing survey data for the 55 units for which this data was available. For those 55 units, the reported total was used when the question on use of financial

records was answered "used financial records extensively." The calculated revenue total was used when the question was answered "used financial records somewhat."

For the seven SDUs for which only baseline survey data was available, the following rules were applied:

- If the reported total was equal to the reported CSAT funding but other funding was reported, the calculated total was used
- If the only revenue source reported was CSAT, but the reported total exceeded that amount, the reported total was used
- If the reported CSAT funding was zero and the reported total was small, the reported total was assumed to be CSAT funding and this value was added to the calculated total.

1.3 Conversion to Per Diem Costs

The calculation of client-day costs from estimated total revenues (as a proxy for costs) requires a measure of average active caseload. Per Diem costs equal total revenues divided by client-days, that is, average active caseload times 365 days. Both the baseline and continuing administrative surveys asked participating programs to record total admissions, current active caseload, and average active caseload for the reference year.

Two consistency checks were done on the caseload data. An average length of stay was calculated from admissions and average caseload, and the average caseload in the continuing administrative survey was compared to the current caseload in the continuing administrative survey, and to the average caseload and current caseload in the baseline survey for the 55 units where this was possible. In six cases the discrepancies were so large that current rather than average caseload was used to calculate costs per client per day. For each of the eight non-hospital, non-correctional facilities with no NTIES administrative data, the cost per day per client is assumed to be equal to the weighted average for its modality. Cost per day per client for the one correctional facility with no NTIES administrative data is assumed to be equal to the weighted average for all other correctional treatment programs. The cost per day per client for the one long-term hospital program in the outcomes study, for which there is no NTIES administrative data, is assumed to be equal to the cost per day per client for the one short-term hospital program in the outcomes study.

1.4 Health-Care Costs

The calculation of health care costs was a straightforward exercise; we obtained from published sources, visit costs per hospital stays, medical visits, and ER visits and multiply these by the corresponding number of times clients reported each type of health care utilization. Sources for the cost data information are noted in Exhibit B-1.

EXHIBIT B-1
ESTIMATED AVERAGE COST OF AN INPATIENT DAY, EMERGENCY ROOM VISIT, PHYSICIAN AND CLINIC VISIT IN 1994

Type of Utilization	Cost	Source	Methodology
Hospital Day	$930	AHA's Hospital Statistics: 1998 edition	Total expenses per adjusted inpatient day for nonfederal short-term general and other special hospitals, 1994 dollars, is $929.65
Emergency Room Visit	$227	Williams, R. 1996. The costs of visits to emergency departments. New England Journal of Medicine, March 7 Vol. 334, No 10, pp. 642-646	The average cost in 1993 was $209.42. The CPI medical care for hospital room in 1993 was 8.5% (Statistical Abstract of the US 1997, p. 119). The 1994 estimate is therefore $227.22
Physician/Clinic Visit	$92	AMA's Physician Marketplace Statistics, 1996 edition Statistical Abstract of the U.S., 1997	The mean fee for an office visit in 1996 was $58.6 or $54.13 in 1994 (deflated by CPI-physician in Statistical Abstract 1997, p 119). Adding in practice expense of about 41% of total (or $37.61) yields $91.75.

2. ANNUAL EARNINGS, TAXES, AND SOCIAL WELFARE BENEFITS

2.1 Earnings

Both the client baseline and follow-up interviews include questions on current or most recent employment, type of work, rate of pay, hours worked per week and number of months in the current or last job. Both interviews ask if any wages, salaries or tips were received during a specified prior time period, and if so, how much. There is no question regarding the length of employment during the prior time period. Some persons (12%) reporting receipt of wage income but refused to provide (or did not know) the amount of income received.

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Inspection of the data reveals another possible problem: very high (legal) post-treatment earnings, amounts ranging up to $700,000, are reported by a small number of persons.

After imputation, all persons reporting wages showed a reported or imputed earnings amount for a 365-day (1 year) interval. Various facets of the earnings data are laid out in Exhibit B-2.

EXHIBIT B-2
COMPARISON OF RAW DATA AND IMPUTED, EDITED, ANNUALIZED DATA ON EARNINGS BEFORE AND AFTER TREATMENT

	Average Interval Covered	Number Reporting Wages	Number Reporting Amount	Average Amount	Median Amount	Total Amount Reported	High Income ($100k+) Share
Raw Data							
Before	365 days	2,470	2,181	$7,780	$3,600	$19,216,589	0.8%
After	309 days	2,639	2,319	$7,828	$3,900	$20,653,102	17.0%
Imputed, Edited, Annualized Data							
Before	365 days	2,470		$8,343	$5,000	$20,608,219	0.7%
After	365 days	2,639		$8,510	$5,448	$22,456,591	1.6%

The same procedures were used to edit and impute both baseline and follow-up earnings data, with the addition of person-specific annualization of post-treatment earnings.

As a first step, all employment-related information for earners reporting very high (legal) earnings (i.e., $100,000 or more) for either interval was inspected for internal consistency of occupation, reported rate of pay, hours worked per week, duration of longest job held during the reference interval, and the length of the reference interval. The earnings for those reporting (1) an hourly pay rate in excess of $100 if the job was classified as unskilled or blue collar; or (2) an income more than four times the amount calculated from the reported rate of pay, hours per week, and the length of the reference interval were excluded.

Then the standard deviation of reported earnings was calculated, and based on this calculation, all responses three or more standard deviations from average were examined for internal consistency. The same decision rules were applied to exclude reported earnings amounts inconsistent with other reported information. Cases with reported earnings below $50 for the

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year or post-treatment interval were also excluded, and post-treatment earnings were converted to a daily rate and then annualized with an assumption of 365 days (1 year) for the interval.

Using the pre-treatment and post-treatment annual earnings data sets, we then performed regression analysis to estimate the correlation between earnings and client characteristics. The equations that best fit the data trends were used to impute the earnings of persons reporting receipt of earnings but with no reported earnings amount, or whose reported earnings had been edited.

2.2 Welfare

The baseline and follow-up interviews included questions on whether welfare or relief, including General Assistance (GA) or Aid to Families with Dependent Children (AFDC), was received during a specified prior time period, and if so, how much. Some persons reporting receipt of welfare refused to provide (or did not know) the amount of income received, their numbers are relatively small (13 at the baseline survey period and 15 percent at the follow-up period).

NTIES did not include data (such as state of residence) related to eligibility or benefit levels for GA or AFDC, making consistency checks very difficult. Inspection of the data did not identify any suspicious outliers.

In order to develop imputed values for non-respondents, procedures parallel to those used for earnings were applied. Cases with reported welfare amounts below $50 for the year or post-treatment interval were excluded, and reported post-treatment welfare amounts were converted to a daily rate then annualized with an assumption of 365 days (1 year) for the interval.

Using the pre-treatment and post-treatment annual welfare data sets, we then performed regression analysis to estimate welfare benefits. The equations that fit the data trends the best were used to impute the welfare benefits of persons reporting receipt of welfare but with no reported welfare amount, or whose reported benefits had been edited.

2.3 SSI

The baseline and follow-up client interviews included questions on whether unemployment compensation (UI), disability pay, and/or SSI was received during a specified

prior time period, and if so, how much. The first two income types listed—UI and disability pay—can only be present based on a history of steady employment not typical of this population. The income reported in this category is, therefore, assumed to be SSI, and is so labeled. Non-response rates were below 10 percent.

NTIES did not include data (such as state of residence or work disability) related to eligibility or benefit levels for SSI, making consistency checks very difficult. Inspection of the data revealed a handful of cases with suspiciously high benefits that were unlikely to be SSI, and these amounts were edited.

Imputed values for non-respondents were developed using the same procedures as those used for earnings or welfare. Cases with reported benefit amounts below $50 for the year or post-treatment interval were excluded, and reported post-treatment amounts were converted to a daily rate then annualized with an assumption of 365 days (1 year) for the interval. Using these pre-treatment and post-treatment SSI benefits data sets, we then regressed SSI benefits on various client characteristics and used the results to impute SSI benefits for individuals reporting receipt of SSI but with no reported SSI amount, or those respondents whose reported benefits were suspiciously high.

3. CRIME RELATED COSTS

In Exhibit B-3, we summarize the data used to estimate criminal justice costs, including our data sources. Below, we provide additional information relating to our method for estimating costs.

To approximate the cost of police protection, we first estimate separate costs for each crime and then aggregate across different crimes to obtain a total cost of police protection. The values used to construct these estimates appear in Exhibit B-4. It is important to note that the cost of police protection is not calculated for the crimes of selling drugs, prostitution, or shoplifting, because of limited data relating to the rate at which these crimes are reported to police and national arrest rates for these crimes. Even so, our method for calculating the cost of police protection would likely provide a poor estimate for prostitution and the selling of drugs, since the probability that these victimless crimes are reported is small. While omitting the costs for these crimes lowers our overall estimate, it is important to recognize that we do not attempt to separate out average variable costs from average total costs. To the extent that our estimate of the cost of police protection reflects fixed costs, which do not vary with the number of crimes, we overestimate the reduction in expenditures for police that come about because of a reduction

EXHIBIT B-3
DATA SUMMARY: CRIME-RELATED COSTS

Criminal Justice Measure	Cost	Construction	Source	Comment
Police Protection	Variable by type of crime	See Exhibit F2	(1) Employment and Expenditures Extract, 1992; (2) Crime in the United States, 1992; (3) Criminal Victimization in the United States, 1994	Expenditures for police were put into 1994 dollars by using the Bureau of Labor Statistics' Employment Cost Index for State and Local Workers
Adjudication and Sentencing	$791.74/arrest	(0.5 * national expenditures for judicial and legal services)/total number of arrests	(1) Employment and Expenditures Extract, 1992; (2) Crime in the United States, 1992	Half of all judicial and legal expenditures are allocated to criminal proceedings and used to calculate the cost per arrest; See Police
Corrections: Jail	$53.24/day	None	The Corrections Yearbook	1994 costs per day
Corrections: Parole/Probation	$3.32/day	None	The Corrections Yearbook	Converted 1996 dollars into 1994 dollars by using the Bureau of Labor Statistics' Employment Cost Index for State and Local Workers
Costs to Victims	Variable by type of crime	See Exhibit F3	1994 National Crime Victimization Survey	Includes property damage, medical costs, and lost wages
Theft Losses	Variable by type of crime	See Exhibit F3	(1) 1994 National Crime Victimization Survey; (2) 1996 National Retail Security Survey	Information on theft losses per shoplifting incident obtained from the 1996 National Retail Security Survey and put into 1994 dollars using the Bureau of Labor Statistics' Consumer Price Index

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EXHIBIT B-4
CALCULATING THE COST OF POLICE PROTECTION

Criminal Activity in NTIES	(A) Expenditures for Police per Arrest[1]	(B) Probability of Arrest[2]	(C) Percent of Crimes Reported to Police[3]	Expenditures for Police Protection per Crime = (A*B*C)
Automobile Theft	$3121.28	0.136	0.782	$331.95
Drug Sale/Manufacture	$3121.28	0.00	0.00	$0.00
Prostitution	$3121.28	0.00	0.00	$0.00
Shoplifting	$3121.28	0.198	0.269	$166.25
Breaking and Entering	$3121.28	0.131	0.505	$206.49
Robbery	$3121.28	0.235	0.554	$406.36
Attacked with Weapon	$3121.28	0.555	0.516	$893.87
Beat Someone Up	$3121.28	0.555	0.358	$620.17
Severely Hurt Someone in Another way	$3121.28	0.555	0.516	$893.87

[1] Per arrest expenditures calculated by dividing national expenditures on police protection by total number of arrests. Information on expenditures is from *Employment and Expenditures Extract, 1992*, while information on total arrests is from *Crime in the United States*.

[2] Information on the probability of an arrest (i.e., percent of crimes cleared) is from *Crime in the United States*. It is calculated as number of arrests divided by total number of reported crimes. No information on drug sale and manufacturing, prostitution, and shoplifting is available. To approximate these values for shoplifting we used the value for theft. We also assumed that the values for Attacked Someone with Weapon, Beat Someone Up, and Severely Hurt Someone in Another Way were equal to the value for the crime of aggravated assault.

[3] Information on the percent of crimes reported to police is obtained from *Criminal Victimization in the United States, 1994*. Again, no information is available for drug sale and manufacturing, prostitution, and shoplifting. We approximate the values for shoplifting by using the values for thefts. The values for Attacked Someone with Weapon and Severely Hurt Someone in Another Way are set equal to the value for the crime of aggravated assault.

in crime. In addition, our methodology assumes that expenditures for police protection is determined by the number of crimes reported to police, but it ignores any effects the number of police have on criminal activity.

Costs for adjudication and sentencing and corrections are as described in the paper. For costs to victims and theft losses, no values were calculated for the crimes of selling drugs and prostitution. For incidents of shoplifting, costs to victims were not calculated. Information on the average theft loss per shoplifting incident was obtained from the *1996 National Retail Security Survey* conducted by the University of Florida. This figure was put into 1994 dollars by using the Bureau of Labor Statistics' Consumer Price Index. In Exhibit B-5, we report the values used for estimating costs to victims and theft losses.

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EXHIBIT B-5
CALCULATING COSTS TO VICTIMS AND THEFT LOSSES

Criminal Activity	COST TO VICTIMS			THEFT LOSSES
	Property Damages	Medical Costs	Lost Wages	Value of Property and Cash Taken
Automobile Theft	$276.69	$0.00	$17.64	$3821.87
Drug Sale/Manufacture	$0.00	$0.00	$0.00	$0.00
Prostitution	$0.00	$0.00	$0.00	$0.00
Shoplifting*	$0.00	$0.00	$0.00	$134.65
Breaking and Entering	$73.95	$0.00	$9.43	$747.82
Robbery	$25.63	$157.89	$43.54	$387.04
Attacked with Weapon	$36.63	$225.68	$31.80	$0.00
Beat Someone Up	$10.30	$24.83	$9.17	$0.00
Severely Hurt Someone in Another way	$36.63	$225.68	$31.80	$0.00

* Source: Values for Costs to Victims and theft losses were calculated using data from the 1994 National Crime Victimization Survey. Information on theft losses per shoplifting incident come from the 1996 National Retail Security Survey conducted by researchers at the University of Florida. Dollar losses were put into 1994 dollars by using the Bureau of Labor Statistic's Consumer Price Index.

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APPENDIX C
TREATMENT COSTS

APPENDIX C
TREATMENT COSTS

EXHIBIT C-1
ESTIMATED COST PER DAY PER CLIENT: ALL UNITS IN OUTCOME STUDY (IN DOLLARS)

	Unit ID	Cost per Day per Client
Non-Correctional Programs by Modality		
Short-term Hospital		
	909306	$357.38
Long-term Hospital		
	39301 **	$357.38
Short-term Residential		
	26801	$55.18
	36801	$53.05
	40201	$175.57
	41702	$77.25
	55501	$64.14
	57301 *	$72.43
	Weighted Avg.	$72.43
Long-term Residential		
	9601	$32.50
	19301	$26.58
	19401	$46.54
	36101	$91.77
	36803	$63.83
	36809	$116.52
	37101	$96.48
	37801	$25.26
	41601	$141.64
	41703	$97.70

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	Unit ID	Cost per Day per Client
	41901	$77.43
	47201	$40.72
	47801	$82.38
	52001	$81.21
	56301 *	$54.97
	Weighted Avg.	$54.97
Methadone		
	25001	$9.17
	25101	$9.75
	29103	$17.89
	37601	$2.97
	50801	$11.24
	52601	$8.75
	25002 *	$9.47
	Weighted Avg.	$9.47
Non-methadone Outpatient		
	1906	$14.25
	9401	$19.44
	10001	$45.05
	11301	$23.76
	19601	$6.16
	22501	$46.58
	26101	$13.46
	29102	$27.04
	29106	$12.40
	31301	$22.89
	31501	$10.79
	33901	$8.21
	34701	$29.10

	Unit ID	Cost per Day per Client
	36806	$6.45
	39901	$16.94
	40205	$6.73
	41902	$14.52
	42302	$37.03
	46901	$11.87
	47101	$39.61
	47701	$8.91
	52201	$20.37
	909302	$11.30
	909315	$8.99
	37201 *	$13.98
	37202 *	$13.98
	37203 *	$13.98
	39701 *	$13.98
	53601 *	$13.98
	Weighted Avg.	$13.98
Correctional Programs by Type and Modality Prison or Jail		
Short-Term Residential		
	42401	$4.76
	42602	$35.02
	58301	$28.20
Long-term Residential		
	42403	$2.36
	42405	$3.78
	42503	$13.74
	42601	$15.91
	43701	$9.76

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	Unit ID	Cost per Day per Client
Non-methadone Outpatient		
	42502	$8.55
	58302	$25.86
Diversion Programs		
Long-term Residential		
	43503	$33.02
Non-methadone Outpatient		
	43501	$9.33
	58201 ***	$11.55
	Weighted Average, All Correctional	$11.55

Notes: * No administrative survey data, only modality and program are known. Weighted average for modality used.

** No administrative survey data, only modality and program are known. Value for short-term hospital used.

*** No administrative survey data, only modality and program are known. Weighted averaged for all correctional used.

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study.

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EXHIBIT C-2
DISTRIBUTION OF TREATMENT COSTS BY POPULATION CHARACTERISTICS
(IN PERCENT OF DOLLARS)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Gender						
Female	30%	25%	45%	32%	42%	37%
Male	70%	75%	55%	68%	58%	63%
Total	100%	100%	100%	100%	100%	100%
Race/Ethnicity						
African-American	92%	31%			64%	52%
White Non-Hispanic	7%	51%	29%	35%	17%	31%
Hispanic	1%	14%	14%	18%	13%	13%
Asian		0%	0%		0%	0%
Other	0%	3%	4%	1%	5%	3%
Total	100%	100%	100%	100%	100%	100%
Baseline Age						
Under 21	0%	9%	24%	1%	15%	16%
21 to 30	28%	45%	32%	13%	28%	33%
31 to 40	44%	36%	35%	50%	38%	37%
40 plus	28%	11%	9%	37%	18%	14%
Total	100%	100%	100%	100%	100%	100%
Education						
HS Dropout	44%	28%	50%	42%	48%	44%
GED	22%	21%	17%	19%	14%	18%
HS Grad	26%	29%	23%	29%	27%	26%
Some College	8%	22%	9%	10%	11%	12%
Total	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-3
DISTRIBUTION OF TREATMENT COSTS BY TREATMENT CHARACTERISTICS
(IN PERCENT OF DOLLARS)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Drug of Abuse						
Other	0%	5%	5%	0%	4%	4%
Marijuana		2%	2%		7%	3%
Heroin	0%	5%	3%	59%	3%	8%
Alcohol	10%	14%	8%	1%	23%	12%
Crack/Cocaine	22%	28%	20%	1%	26%	22%
Polydrug	67%	46%	62%	39%	37%	51%
Total	100%	100%	100%	100%	100%	100%
Treatment Duration						
1 Month or Less	72%	29%	6%	0%	2%	14%
1 or 2 Months	6%	17%	18%	3%	13%	15%
3 or 4 Months	4%	15%	22%	7%	17%	17%
5 Months	7%	4%	21%	5%	10%	13%
6 Months or More	11%	35%	32%	85%	57%	41%
Total	100%	100%	100%	100%	100%	100%
Treatment Cost						
$500 or Less	0%	2%	3%	1%	3%	2%
$501 to $1,000		3%	3%	3%	7%	4%
$1,001 to $1,500	1%	5%	3%	6%	8%	5%
$1,501 to $2,000	2%	10%	4%	7%	10%	7%
$2,001 to $4,000	46%	15%	10%	27%	27%	18%
$4,001 to $6,000	19%	19%	9%	40%	13%	15%
$6,001 to $10,000	3%	8%	18%	16%	11%	13%
Over $10,000	29%	37%	52%		21%	36%
Total	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-4
TOTAL TREATMENT COSTS BY POPULATION CHARACTERISTICS
(IN DOLLARS)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Gender						
Female	$273,755	$899,064	$2,773,308	$360,139	$1,467,093	$5,773,359
Male	$624,705	$2,757,578	$3,395,696	$780,679	$2,059,852	$9,710,355
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715
Race/Ethnicity						
African-American	$825,197	$1,150,655	$3,223,310	$529,757	$2,257,586	$8,078,351
White Non-Hispanic	$65,758	$1,871,423	$1,817,946	$395,210	$604,367	$4,754,704
Hispanic	$5,361	$525,555	$886,092	$209,783	$460,135	$2,086,926
Asian		$5,161	$10,761		$14,214	$30,136
Other	$2,144	$103,848	$230,895	$6,068	$190,642	$533,597
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715
Baseline Age						
Under 21	$2,859	$321,208	$1,505,943	$9,305	$542,652	$2,426,640
21 to 30	$247,309	$1,641,676	$1,988,737	$146,492	$996,029	$5,067,417
31 to 40	$398,839	$1,304,855	$2,135,755	$565,726	$1,347,486	$5,752,661
40 plus	$249,453	$388,903	$538,568	$419,295	$640,777	$2,236,997
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715
Education						
HS Dropout	$391,692	$1,024,455	$3,097,801	$477,078	$1,700,184	$6,783,056
GED	$200,492	$771,034	$1,076,958	$219,815	$487,221	$2,755,519
HS Grad	$237,660	$1,058,940	$1,434,857	$330,961	$955,956	$4,018,374
Some College	$68,617	$802,214	$559,387	$112,964	$383,583	$1,926,765
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-5
TOTAL TREATMENT COSTS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Drug of Abuse						
Other	$1,430	$189,343	$282,680	$4,968	$145,325	$623,747
Marijuana		$83,938	$121,605		$251,525	$457,069
Heroin	$2,144	$189,142	$199,610	$670,498	$111,979	$1,173,375
Alcohol	$88,631	$511,045	$483,892	$8,442	$793,740	$1,885,749
Crack/Cocaine	$200,492	$1,006,706	$1,244,054	$17,049	$918,542	$3,400,780
Polydrug	$605,764	$1,676,468	$3,837,162	$439,861	$1,305,833	$7,942,996
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715
Treatment Duration						
1 Month or Less	$645,433	$1,054,455	$355,190	$5,680	$71,566	$2,132,323
1 or 2 Months	$53,607	$638,518	$1,135,757	$34,508	$461,813	$2,382,834
3 or 4 Months	$38,240	$544,053	$1,378,693	$78,850	$606,620	$2,679,693
5 Months	$66,116	$148,919	$1,319,446	$54,362	$3,642,886	$1,953,130
6 Months or More	$95,064	$1,270,696	$1,979,897	$967,419	$2,022,659	$6,335,735
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715
Treatment Cost						
$500 or Less	$1,787	$72,103	$160,113	$14,343	$106,253	$354,598
$501 to $1,000		$104,225	$158,562	$38,167	$259,131	$560,086
$1,001 to $1,500	$9,292	$191,637	$215,635	$63,801	$293,520	$773,886
$1,501 to $2,000	$16,082	$375,466	$223,272	$76,997	$341,604	$1,033,422
$2,001 to $4,000	$413,849	$552,647	$601,607	$310,007	$964,226	$2,842,335
$4,001 to $6,000	$166,898	$703,331	$529,545	$455,404	$441,184	$2,296,362
$6,001 to $10,000	$26,446	$307,210	$1,080,911	$182,099	$387,412	$1,984,078
Over $10,000	$264,106	$1,350,022		$3,199,359	$733,614	$5,638,947
Total	$898,460	$3,656,642	$6,169,003	$1,140,818	$3,526,944	$15,483,715

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-6
AVERAGE COST BY POPULATION CHARACTERISTICS
(IN DOLLARS PER TREATMENT EPISODE)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Gender						
Female	$3,699	$3,393	$5,977	$2,518	$2,805	$3,930
Male	$4,399	$2,763	$2,943	$2,602	$1,721	$2,559
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941
Race/Ethnicity						
African-American	$4,210	$2,200	$3,488	$2,511	$2,148	$2,777
White Non-Hispanic	$3,868	$3,634	$4,198	$3,266	$1,889	$3,382
Hispanic	$2,680	$2,752	$4,453	$1,925	$1,723	$2,717
Asian		$2,581	$2,152		$2,031	$2,153
Other	$2,144	$3,245	$4,051	$3,034	$2,542	$3,195
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941
Baseline Age						
Under 21	$2,859	$4,524	$4,195	$2,326	$2,261	$3,584
21 to 30	$3,691	$2,969	$3,697	$2,007	$2,024	$2,938
31 to 40	$4,029	$2,615	$3,869	$2,656	$1,987	$2,819
40 plus	$5,091	$2,778	$3,187	$2,740	$2,067	$2,725
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941
Education						
HS Dropout	$3,319	$2,318	$3,796	$2,498	$2,234	$2,909
GED	$4,890	$2,814	$3,273	$2,748	$1,740	$2,745
HS Grad	$5,527	$3,161	$4,555	$2,566	$2,078	$3,134
Some College	$4,901	$3,784	$3,540	$2,627	$1,752	$2,983
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-7
AVERAGE COST OF TREATMENT BY TREATMENT CHARACTERISTICS
(IN DOLLARS PER TREATMENT EPISODE)

	Modality					Total
	ST Hosp	ST Res	LT Res	Meth	Outpatient	
Drug of Abuse						
Other	$1,430	$3,005	$5,048	$2,484	$1,840	$3,103
Marijuana		$1,614	$2,133		$2,648	$2,241
Heroin	$2,144	$2,456	$3,914	$2,640	$2,153	$2,697
Alcohol	$3,165	$2,094	$3,043	$8,442	$1,903	$2,221
Crack/Cocaine	$3,342	$2,876	$3,362	$2,841	$2,361	$2,892
Polydrug	$4,808	$3,515	$4,148	$2,444	$1,898	$3,311
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941
Treatment Duration						
1 Month or Less	$3,073	$1,731	$860	$118	$268	$1,378
1 or 2 Months	$17,869	$1,458	$2,724	$585	$838	$1,621
3 or 4 Months	$38,240	$4,731	$3,259	$1,195	$1,699	$2,783
5 Months	$66,116	$6,475	$10,072	$1,699	$2,478	$5,848
6 Months or More	$95,064	$16,291	$8,461	$4,048	$5,082	$6,669
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941
Treatment Cost						
$500 or Less	$357	$258	$356	$1,199	$276	$297
$501 to $1,000		$790	$741	$734	$726	$742
$1,001 to $1,500	$1,327	$1,213	$1,284	$1,227	$1,233	$1,242
$1,501 to $2,000	$1,787	$1,640	$1,704	$1,711	$1,752	$1,697
$2,001 to $4,000	$2,741	$2,805	$2,811	$3,010	$2,755	$2,800
$4,001 to $6,000	$4,909	$4,884	$4,858	$4,950	$4,795	$4,876
$6,001 to $10,000	$8,815	$7,493	$7,666	$6,744	$7,748	$7,573
Over $10,000	$37,729	$16,464	$16,751		$13,842	$16,733
Total	$4,160	$2,895	$3,813	$2,575	$2,051	$2,941

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-8
DISTRIBUTION OF TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS: ALL MODALITIES
(IN PERCENT OF DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	39%	16%	37%	27%	50%	35%	37%
Male	61%	84%	63%	73%	50%	65%	63%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	16%	40%	35%	32%	72%	54%	52%
White Non-Hispanic	71%	30%	42%	37%	19%	30%	31%
Hispanic	6%	17%	22%	20%	8%	13%	13%
Asian		1%		0%		0%	0%
Other	6%	12%	1%	11%	1%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	17%	57%	3%	12%	3%	21%	16%
21 to 30	43%	31%	23%	26%	42%	31%	33%
31 to 40	34%	10%	51%	37%	42%	35%	37%
40 plus	6%	2%	23%	25%	13%	13%	14%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	36%	59%	38%	40%	38%	48%	44%
GED	19%	18%	21%	17%	12%	20%	18%
HS Grad	30%	20%	26%	26%	33%	23%	26%
Some College	15%	4%	15%	17%	16%	10%	12%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-9
TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS
ALL MODALITIES
(IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$246,055	$75,364	$436,189	$513,472	$1,714,516	$2,787,763	$5,773,359
Male	$377,692	$381,705	$737,185	$1,372,277	$1,686,263	$5,155,233	$9,710,355
Total	$623,747	$457,069	$1,173,375	$1,885,749	$3,400,780	$7,942,996	$15,483,715
Race/Ethnicity							
African-American	$101,562	$184,914	$411,622	$598,258	$2,454,192	$4,327,803	$8,078,351
White Non-Hispanic	$445,969	$135,255	$494,058	$697,866	$632,481	$2,349,075	$4,754,704
Hispanic	$40,251	$77,428	$258,948	$375,774	$277,831	$1,056,694	$2,086,926
Asian		$3,749		$6,673		$19,714	$30,136
Other	$35,965	$55,723	$8,746	$207,178	$36,276	$189,710	$533,597
Total	$623,747	$457,069	$1,173,375	$1,885,749	$3,400,780	$7,942,996	$15,483,715
Baseline Age							
Under 21	$105,734	$262,645	$32,811	$230,958	$114,206	$1,680,285	$2,426,640
21 to 30	$268,496	$141,110	$272,223	$481,449	$1,422,358	$2,481,781	$5,067,417
31 to 40	$209,752	$46,044	$597,634	$701,220	$1,436,986	$2,761,026	$5,752,661
40 plus	$39,765	$7,270	$270,706	$472,122	$427,230	$1,019,903	$2,236,997
Total	$623,747	$457,069	$1,173,375	$1,885,749	$3,400,780	$7,942,996	$15,483,715
Education							
HS Dropout	$226,020	$267,514	$449,527	$745,013	$1,301,978	$3,793,004	$6,783,056
GED	$120,057	$82,451	$243,227	$327,809	$425,023	$1,556,953	$2,755,519
HS Grad	$186,043	$90,779	$308,194	$489,045	$1,117,064	$1,827,249	$4,018,374
Some College	$91,627	$16,324	$172,427	$323,883	$556,715	$765,789	$1,926,765
Total	$623,747	$457,069	$1,173,375	$1,885,749	$3,400,780	$7,942,996	$15,483,715

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-10
DISTRIBUTION OF DRUG OF ABUSE BY POPULATION CHARACTERISTICS
ALL MODALITIES
(IN PERCENT OF PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	28%	10%	31%	18%	38%	27%	28%
Male	72%	90%	69%	82%	62%	73%	72%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	26%	51%	44%	34%	73%	59%	55%
White Non-Hispanic	60%	26%	28%	39%	16%	24%	27%
Hispanic	9%	17%	27%	18%	9%	15%	15%
Asian		1%		0%		0%	0%
Other	5%	5%	1%	8%	2%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	20%	50%	4%	9%	4%	17%	13%
21 to 30	36%	32%	24%	27%	40%	33%	33%
31 to 40	33%	15%	47%	37%	45%	37%	39%
40 plus	11%	2%	26%	27%	11%	13%	16%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	34%	62%	41%	38%	42%	48%	44%
GED	22%	18%	17%	19%	17%	20%	19%
HS Grad	29%	15%	30%	24%	28%	22%	24%
Some College	14%	5%	12%	18%	13%	10%	12%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-11
DRUG OF ABUSE BY POPULATION CHARACTERISTICS
ALL MODALITIES
(IN PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	56	21	137	155	448	652	1,469
Male	145	183	298	694	728	1,747	3,795
Total	201	204	435	849	1,176	2,399	5,264
Race/Ethnicity							
African-American	53	104	191	288	863	1,410	2,909
White Non-Hispanic	120	53	122	335	189	587	1,406
Hispanic	18	34	117	150	100	349	768
Asian		3		4		7	14
Other	10	10	5	72	24	46	167
Total	201	204	435	849	1,176	2,399	5,264
Baseline Age							
Under 21	40	103	16	76	44	398	677
21 to 30	72	65	105	228	465	790	1,725
31 to 40	67	31	203	314	533	893	2,041
40 plus	22	5	111	231	134	318	821
Total	201	204	435	849	1,176	2,399	5,264
Education							
HS Dropout	68	126	178	324	493	1,143	2,332
GED	45	37	75	164	195	488	1,004
HS Grad	59	31	131	208	333	520	1,282
Some College	29	10	51	153	155	248	646
Total	201	204	435	849	1,176	2,399	5,264

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT C-12
AVERAGE COST OF TREATMENT BY POPULATION CHARACTERISTICS
ALL MODALITIES
(IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$4,394	$3,589	$3,184	$3,313	$3,827	$4,276	$3,930
Male	$2,605	$2,086	$2,474	$1,977	$2,316	$2,951	$2,559
Total	$3,103	$2,241	$2,697	$2,221	$2,892	$3,311	$2,941
Race/Ethnicity							
African-American	$1,916	$1,778	$2,155	$2,077	$2,844	$3,069	$2,777
White Non-Hispanic	$3,716	$2,552	$4,050	$2,083	$3,346	$4,002	$3,382
Hispanic	$2,236	$2,277	$2,213	$2,505	$2,778	$3,028	$2,717
Asian		$1,250		$1,668		$2,816	$2,153
Other	$3,597	$5,572	$1,749	$2,877	$1,511	$4,124	$3,195
Total	$3,103	$2,241	$2,697	$2,221	$2,892	$3,311	$2,941
Baseline Age							
Under 21	$2,643	$2,550	$2,051	$3,039	$2,596	$4,222	$3,584
21 to 30	$3,729	$2,171	$2,593	$2,112	$3,059	$3,141	$2,938
31 to 40	$3,131	$1,485	$2,944	$2,233	$2,696	$3,092	$2,819
40 plus	$1,808	$1,454	$2,439	$2,044	$3,188	$3,207	$2,725
Total	$3,103	$2,241	$2,697	$2,221	$2,892	$3,311	$2,941
Education							
HS Dropout	$3,324	$2,123	$2,525	$2,299	$2,641	$3,318	$2,909
GED	$2,668	$2,228	$3,243	$1,999	$2,180	$3,190	$2,745
HS Grad	$3,153	$2,928	$2,353	$2,351	$3,355	$3,514	$3,134
Some College	$3,160	$1,632	$3,381	$2,117	$3,592	$3,088	$2,983
Total	$3,103	$2,241	$2,697	$2,221	$2,892	$3,311	$2,941

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-13
DISTRIBUTION OF TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN SHORT-TERM RESIDENTIAL
(IN PERCENT OF DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	39%	29%	29%	15%	31%	21%	25%
Male	61%	71%	71%	85%	69%	79%	75%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	3%	10%	33%	20%	46%	31%	31%
White Non-Hispanic	85%	51%	47%	54%	39%	54%	51%
Hispanic	5%	31%	19%	21%	14%	12%	14%
Asian				0%		0%	0%
Other	7%	8%	1%	5%	0%	3%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	16%	42%	1%	6%	1%	13%	9%
21 to 30	38%	47%	46%	31%	47%	48%	45%
31 to 40	38%	11%	43%	37%	41%	32%	36%
40 plus	8%	0%	9%	26%	11%	7%	11%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	28%	46%	27%	26%	26%	29%	28%
GED	18%	22%	15%	19%	16%	26%	21%
HS Grad	32%	26%	19%	36%	29%	28%	29%
Some College	23%	5%	39%	19%	28%	18%	22%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-14
TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN SHORT-TERM RESIDENTIAL (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$74,155	$23,930	$53,936	$76,346	$316,339	$354,359	$899,064
Male	$115,189	$60,008	$135,206	$434,699	$690,367	$1,322,109	$2,757,578
Total	$189,343	$83,938	$189,142	$511,045	$1,006,706	$1,676,468	$3,656,642
Race/Ethnicity							
African-American	$5,590	$8,213	$62,858	$99,728	$461,255	$513,012	$1,150,655
White Non-Hispanic	$161,048	$42,727	$89,063	$275,768	$395,540	$907,278	$1,871,423
Hispanic	$9,187	$26,193	$35,783	$106,760	$145,839	$201,792	$525,555
Asian				$1,016		$4,146	$5,161
Other	$13,519	$6,805	$1,438	$27,774	$4,072	$50,240	$103,848
Total	$189,343	$83,938	$189,142	$511,045	$1,006,706	$1,676,468	$3,656,642
Baseline Age							
Under 21	$30,518	$35,144	$1,926	$28,426	$9,646	$215,548	$321,208
21 to 30	$72,129	$39,497	$87,424	$159,030	$477,320	$806,276	$1,641,676
31 to 40	$71,230	$9,040	$82,262	$190,288	$411,795	$540,241	$1,304,855
40 plus	$15,466	$257	$17,530	$133,301	$107,945	$114,403	$388,903
Total	$189,343	$83,938	$189,142	$511,045	$1,006,706	$1,676,468	$3,656,642
Education							
HS Dropout	$53,221	$38,879	$50,733	$133,851	$263,945	$483,826	$1,024,455
GED	$33,598	$18,713	$27,608	$97,113	$164,855	$429,147	$771,034
HS Grad	$59,844	$21,969	$36,806	$184,139	$295,117	$461,065	$1,058,940
Some College	$42,681	$4,377	$73,995	$95,942	$282,789	$302,430	$802,214
Total	$189,343	$83,938	$189,142	$511,045	$1,006,706	$1,676,468	$3,656,642

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-15
DISTRIBUTION OF DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN SHORT-TERM RESIDENTIAL (IN PERCENT OF PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	32%	10%	30%	10%	26%	22%	21%
Male	68%	90%	70%	90%	74%	78%	79%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	10%	37%	47%	20%	59%	43%	41%
White Non-Hispanic	83%	40%	26%	56%	27%	40%	41%
Hispanic	5%	19%	25%	18%	13%	15%	15%
Asian				0%		0%	0%
Other	3%	4%	3%	5%	1%	2%	3%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	13%	19%	1%	5%	2%	7%	6%
21 to 30	38%	54%	45%	34%	48%	45%	44%
31 to 40	37%	25%	43%	37%	45%	39%	40%
40 plus	13%	2%	10%	25%	5%	9%	11%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	24%	48%	30%	33%	40%	34%	35%
GED	27%	23%	19%	23%	18%	23%	22%
HS Grad	33%	21%	29%	25%	26%	27%	27%
Some College	16%	8%	22%	19%	16%	16%	17%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-16
DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN SHORT-TERM RESIDENTIAL (IN PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	20	5	23	24	90	103	265
Male	43	47	54	220	260	374	998
Total	63	52	77	244	350	477	1,263
Race/Ethnicity							
African-American	6	19	36	49	207	206	523
White Non-Hispanic	52	21	20	137	96	189	515
Hispanic	3	10	19	44	45	70	191
Asian				1		1	2
Other	2	2	2	13	2	11	32
Total	63	52	77	244	350	477	1,263
Baseline Age							
Under 21	8	10	1	11	8	33	71
21 to 30	24	28	35	83	167	216	553
31 to 40	23	13	33	90	156	184	499
40 plus	8	1	8	60	19	44	140
Total	63	52	77	244	350	477	1,263
Education							
HS Dropout	15	25	23	80	139	160	442
GED	17	12	15	56	62	112	274
HS Grad	21	11	22	62	92	127	335
Some College	10	4	17	46	57	78	212
Total	63	52	77	244	350	477	1,263

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-17
AVERAGE COST OF TREATMENT IN SHORT-TERM RESIDENTIAL BY POPULATION CHARACTERISTICS (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$3,708	$4,786	$2,345	$3,181	$3,515	$3,440	$3,393
Male	$2,679	$1,277	$2,504	$1,976	$2,655	$3,535	$2,763
Total	$3,005	$1,614	$2,456	$2,094	$2,876	$3,515	$2,895
Race/Ethnicity							
African-American	$932	$432	$1,746	$2,035	$2,228	$2,490	$2,200
White Non-Hispanic	$3,097	$2,035	$4,453	$2,013	$4,120	$4,800	$3,634
Hispanic	$3,062	$2,619	$1,883	$2,426	$3,241	$2,883	$2,752
Asian				$1,016		$4,146	$2,581
Other	$6,759	$3,403	$719	$2,136	$2,036	$4,567	$3,245
Total	$3,005	$1,614	$2,456	$2,094	$2,876	$3,515	$2,895
Baseline Age							
Under 21	$3,815	$3,514	$1,926	$2,584	$1,206	$6,532	$4,524
21 to 30	$3,005	$1,411	$2,498	$1,916	$2,858	$3,733	$2,969
31 to 40	$3,097	$695	$2,493	$2,114	$2,640	$2,936	$2,615
40 plus	$1,933	$257	$2,191	$2,222	$5,681	$2,600	$2,778
Total	$3,005	$1,614	$2,456	$2,094	$2,876	$3,515	$2,895
Education							
HS Dropout	$3,548	$1,555	$2,206	$1,673	$1,899	$3,024	$2,318
GED	$1,976	$1,559	$1,841	$1,734	$2,659	$2,832	$2,814
HS Grad	$2,850	$1,997	$1,673	$2,970	$3,208	$3,630	$3,161
Some College	$4,268	$1,094	$4,353	$2,086	$4,961	$3,877	$3,784
Total	$3,005	$1,614	$2,456	$2,094	$2,876	$3,515	$2,895

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT C-18
DISTRIBUTION OF TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN LONG-TERM RESIDENTIAL (IN PERCENT OF DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	46%	12%	61%	41%	59%	41%	45%
Male	54%	88%	39%	59%	41%	59%	55%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	12%	29%	19%	26%	78%	53%	52%
White Non-Hispanic	77%	39%	59%	36%	14%	28%	29%
Hispanic	7%	27%	22%	18%	6%	16%	14%
Asian		1%				0%	0%
Other	4%	4%		20%	2%	3%	4%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	10%	68%	6%	19%	7%	31%	24%
21 to 30	55%	28%	25%	30%	42%	28%	32%
31 to 40	33%	3%	56%	35%	40%	33%	35%
40 plus	2%	0%	12%	15%	10%	8%	9%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	43%	50%	34%	47%	41%	55%	50%
GED	24%	37%	35%	15%	11%	18%	17%
HS Grad	25%	13%	17%	18%	36%	20%	23%
Some College	7%		14%	20%	13%	7%	9%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-19
TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN LONG-TERM RESIDENTIAL (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$130,897	$14,371	$121,046	$198,281	$733,117	$1,575,596	$2,773,308
Male	$151,784	$107,234	$78,565	$285,611	$510,936	$2,261,566	$3,395,696
Total	$282,680	$121,605	$199,610	$483,892	$1,244,054	$3,837,162	$6,169,003
Race/Ethnicity							
African-American	$35,007	$35,089	$38,701	$123,893	$971,511	$2,019,110	$3,223,310
White Non-Hispanic	$216,742	$47,607	$116,911	$176,389	$179,084	$1,081,213	$1,817,946
Hispanic	$19,969	$33,069	$43,999	$86,741	$74,003	$628,310	$886,092
Asian		$1,484				$9,277	$10,761
Other	$10,963	$4,355		$96,870	$19,456	$99,252	$230,895
Total	$282,680	$121,605	$199,610	$483,892	$1,244,054	$3,837,162	$6,169,003
Baseline Age							
Under 21	$27,616	$83,277	$12,682	$92,288	$91,521	$1,198,559	$1,505,943
21 to 30	$155,525	$34,320	$49,804	$146,190	$527,012	$1,075,886	$1,988,737
31 to 40	$93,338	$3,597	$112,237	$171,506	$496,491	$1,258,585	$2,135,755
40 plus	$6,201	$412	$24,888	$73,908	$129,029	$304,131	$538,568
Total	$282,680	$121,605	$199,610	$483,892	$1,244,054	$3,837,162	$6,169,003
Education							
HS Dropout	$121,355	$60,771	$67,896	$225,958	$504,245	$2,117,576	$3,097,801
GED	$68,347	$44,648	$70,001	$73,892	$136,073	$683,997	$1,076,958
HS Grad	$72,017	$16,187	$33,220	$86,700	$441,802	$784,931	$1,434,857
Some College	$20,962		$28,493	$97,342	$161,933	$250,657	$559,387
Total	$282,680	$121,605	$199,610	$483,892	$1,244,054	$3,837,162	$6,169,003

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-20
DISTRIBUTION OF DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN LONG-TERM RESIDENTIAL (IN PERCENT OF PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	27%	9%	24%	14%	46%	26%	29%
Male	73%	91%	76%	86%	54%	74%	71%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	20%	46%	55%	30%	77%	57%	57%
White Non-Hispanic	70%	25%	24%	47%	16%	25%	27%
Hispanic	9%	23%	22%	8%	4%	15%	12%
Asian		4%				0%	0%
Other	2%	4%		15%	2%	2%	4%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	14%	63%	14%	16%	7%	28%	22%
21 to 30	45%	26%	22%	33%	39%	31%	33%
31 to 40	32%	9%	39%	33%	43%	32%	34%
40 plus	9%	2%	25%	19%	12%	8%	10%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	45%	63%	45%	48%	44%	53%	50%
GED	25%	25%	20%	21%	19%	20%	20%
HS Grad	18%	12%	25%	19%	26%	17%	19%
Some College	13%		10%	12%	11%	9%	10%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-21
DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN LONG-TERM RESIDENTIAL (IN PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	15	5	12	22	169	241	464
Male	41	52	39	137	201	684	1,154
Total	56	57	51	159	370	925	1,618
Race/Ethnicity							
African-American	11	26	28	48	285	526	924
White Non-Hispanic	39	14	12	74	60	234	433
Hispanic	5	13	11	13	16	141	199
Asian		2				3	5
Other	1	2		24	9	21	57
Total	56	57	51	159	370	925	1,618
Baseline Age							
Under 21	8	36	7	25	25	258	359
21 to 30	25	15	11	52	144	291	538
31 to 40	18	5	20	52	158	299	552
40 plus	5	1	13	30	43	77	169
Total	56	57	51	159	370	925	1,618
Education							
HS Dropout	25	36	23	77	162	493	816
GED	14	14	10	33	72	186	329
HS Grad	10	7	13	30	95	160	315
Some College	7		5	19	41	86	158
Total	56	57	51	159	370	925	1,618

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-22
AVERAGE COST OF TREATMENT IN LONG-TERM RESIDENTIAL BY POPULATION CHARACTERISTICS (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$8,726	$2,874	$10,087	$9,013	$4,338	$6,538	$5,977
Male	$3,702	$2,062	$2,014	$2,085	$2,542	$3,306	$2,943
Total	$5,048	$2,133	$3,914	$3,043	$3,362	$4,148	$3,813
Race/Ethnicity							
African-American	$3,182	$1,350	$1,382	$2,581	$3,409	$3,839	$3,488
White Non-Hispanic	$5,557	$3,401	$9,743	$2,384	$2,985	$4,621	$4,198
Hispanic	$3,994	$2,544	$4,000	$6,672	$4,625	$4,456	$4,453
Asian		$742				$3,092	$2,152
Other	$10,963	$2,178		$4,036	$2,162	$4,726	$4,051
Total	$5,048	$2,133	$3,914	$3,043	$3,362	$4,148	$3,813
Baseline Age							
Under 21	$3,542	$2,313	$1,812	$3,692	$3,661	$4,646	$4,195
21 to 30	$6,221	$2,288	$4,528	$2,811	$3,660	$3,697	$3,697
31 to 40	$5,185	$719	$5,612	$3,298	$3,142	$4,209	$3,869
40 plus	$1,240	$412	$1,914	$2,464	$3,001	$3,950	$3,187
Total	$5,048	$2,133	$3,914	$3,043	$3,362	$4,148	$3,813
Education							
HS Dropout	$4,854	$1,688	$2,952	$2,935	$3,113	$4,295	$3,796
GED	$4,882	$3,189	$7,000	$2,239	$1,890	$3,677	$3,273
HS Grad	$7,202	$2,312	$2,555	$2,890	$4,651	$4,906	$4,555
Some College	$2,995		$5,699	$5,123	$3,950	$2,915	$3,540
Total	$5,048	$2,133	$3,914	$3,043	$3,362	$4,148	$3,813

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-23
DISTRIBUTION OF TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN METHADONE MAINTENANCE (IN PERCENT OF DOLLARS)

	Drug of Abuse		Total
	Heroin Only	Polydrug	
Gender			
Female	33%	29%	32%
Male	67%	71%	68%
Total	100%	100%	100%
Race/Ethnicity			
African-American	38%	59%	46%
White Non-Hispanic	42%	25%	35%
Hispanic	20%	15%	18%
Asian			
Other	1%		1%
Total	100%	100%	100%
Baseline Age			
Under 21	1%	0%	1%
21 to 30	16%	9%	13%
31 to 40	52%	48%	50%
40 plus	31%	42%	37%
Total	100%	100%	100%
Education			
HS Dropout	42%	41%	42%
GED	17%	25%	19%
HS Grad	32%	25%	29%
Some College	10%	9%	10%
Total	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-24
TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN METHADONE MAINTENANCE (IN DOLLARS)

	Drug of Abuse		Total
	Heroin Only	Polydrug	
Gender			
Female	$221,308	$125,375	$360,139
Male	$449,190	$314,487	$780,679
Total	$670,498	$439,861	$1,140,818
Race/Ethnicity			
African-American	$252,828	$259,966	$529,757
White Non-Hispanic	$278,457	$111,786	$395,210
Hispanic	$133,145	$68,110	$209,783
Asian			
Other	$6,068		$6,068
Total	$670,498	$439,861	$1,140,818
Baseline Age			
Under 21	$8,510	$795	$9,305
21 to 30	$105,006	$41,485	$146,492
31 to 40	$346,455	$211,712	$565,726
40 plus	$210,527	$185,869	$419,295
Total	$670,498	$439,861	$1,140,818
Education			
HS Dropout	$279,906	$179,127	$477,078
GED	$111,874	$107,940	$219,815
HS Grad	$213,255	$111,190	$330,961
Some College	$65,462	$41,604	$112,964
Total	$670,498	$439,861	$1,140,818

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-25
DISTRIBUTION OF DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN METHADONE MAINTENANCE (IN PERCENT OF PERSONS)

	Drug of Abuse		Total
	Heroin Only	Polydrug	
Gender			
Female	31%	33%	32%
Male	69%	67%	68%
Total	100%	100%	100%
Race/Ethnicity			
African-American	41%	58%	48%
White Non-Hispanic	31%	22%	27%
Hispanic	28%	20%	25%
Asian			
Other	1%		0%
Total	100%	100%	100%
Baseline Age			
Under 21	1%	1%	1%
21 to 30	17%	17%	16%
31 to 40	50%	46%	48%
40 plus	31%	37%	35%
Total	100%	100%	100%
Education			
HS Dropout	43%	43%	43%
GED	15%	23%	18%
HS Grad	33%	24%	29%
Some College	9%	10%	10%
Total	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-26
DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN METHADONE MAINTENANCE (IN PERSONS)

	Drug of Abuse		Total
	Heroin Only	Polydrug	
Gender			
Female	79	60	143
Male	175	120	300
Total	254	180	443
Race/Ethnicity			
African-American	103	104	211
White Non-Hispanic	79	40	121
Hispanic	70	36	109
Asian			
Other	2		2
Total	254	180	443
Baseline Age			
Under 21	3	1	4
21 to 30	43	30	73
31 to 40	128	82	213
40 plus	80	67	153
Total	254	180	443
Education			
HS Dropout	108	78	191
GED	39	41	80
HS Grad	83	43	129
Some College	24	18	43
Total	254	180	443

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-27
AVERAGE COST OF TREATMENT IN METHADONE MAINTENANCE BY POPULATION CHARACTERISTICS (IN DOLLARS)

	Drug of Abuse		Total
	Heroin Only	Polydrug	
Gender			
Female	$2,801	$2,090	$2,518
Male	$2,567	$2,621	$2,602
Total	$2,640	$2,444	$2,575
Race/Ethnicity			
African-American	$2,455	$2,500	$2,511
White Non-Hispanic	$3,525	$2,795	$3,266
Hispanic	$1,902	$1,892	$1,925
Asian			
Other	$3,034		$3,034
Total	$2,640	$2,444	$2,575
Baseline Age			
Under 21	$2,837	$795	$2,326
21 to 30	$2,442	$1,383	$2,007
31 to 40	$2,707	$2,582	$2,656
40 plus	$2,632	$2,774	$2,740
Total	$2,640	$2,444	$2,575
Education			
HS Dropout	$2,592	$2,297	$2,498
GED	$2,869	$2,633	$2,748
HS Grad	$2,569	$2,586	$2,566
Some College	$2,728	$2,311	$2,627
Total	$2,640	$2,444	$2,575

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-28
DISTRIBUTION OF TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN OUTPATIENT NON-METHADONE (IN PERCENT OF DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	24%	15%	36%	29%	61%	44%	42%
Male	76%	85%	64%	71%	39%	56%	58%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	41%	56%	49%	39%	88%	68%	64%
White Non-Hispanic	43%	18%	9%	28%	5%	17%	17%
Hispanic	8%	7%	41%	21%	6%	12%	13%
Asian		1%		1%		0%	0%
Other	8%	18%	1%	10%	1%	3%	5%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	33%	57%	9%	14%	1%	17%	15%
21 to 30	28%	27%	27%	21%	34%	29%	28%
31 to 40	27%	13%	51%	38%	48%	37%	38%
40 plus	12%	3%	14%	27%	17%	18%	18%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	35%	67%	46%	42%	44%	53%	48%
GED	12%	8%	28%	17%	12%	14%	14%
HS Grad	33%	21%	22%	25%	35%	24%	27%
Some College	19%	5%	4%	16%	10%	9%	11%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-29
TREATMENT COST BY DRUG AND POPULATION CHARACTERISTICS IN OUTPATIENT NON-METHADONE (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$35,224	$37,063	$39,899	$228,124	$557,316	$569,467	$1,467,093
Male	$110,101	$214,463	$72,080	$565,615	$361,226	$736,366	$2,059,852
Total	$145,325	$251,525	$111,979	$793,740	$918,542	$1,305,833	$3,526,944
Race/Ethnicity							
African-American	$59,536	$141,613	$55,091	$313,525	$804,687	$883,135	$2,257,586
White Non-Hispanic	$63,212	$44,921	$9,628	$225,695	$43,205	$217,706	$604,367
Hispanic	$11,094	$18,165	$46,021	$168,471	$57,902	$158,482	$460,135
Asian		$2,265		$5,658		$6,291	$14,214
Other	$11,484	$44,562	$1,240	$80,390	$12,748	$40,218	$190,642
Total	$145,325	$251,525	$111,979	$793,740	$918,542	$1,305,833	$3,526,944
Baseline Age							
Under 21	$47,599	$144,225	$9,694	$110,244	$13,039	$217,852	$542,652
21 to 30	$40,841	$67,293	$29,989	$169,081	$309,382	$379,443	$996,029
31 to 40	$39,404	$33,407	$56,680	$301,187	$439,361	$477,447	$1,347,486
40 plus	$17,480	$6,601	$15,617	$213,228	$156,760	$231,091	$640,777
Total	$145,325	$251,525	$111,979	$793,740	$918,542	$1,305,833	$3,526,944
Education							
HS Dropout	$51,444	$167,865	$50,991	$335,306	$399,816	$694,762	$1,700,184
GED	$18,112	$19,089	$31,599	$134,289	$107,655	$174,476	$487,221
HS Grad	$47,785	$52,624	$24,912	$198,550	$320,700	$311,385	$955,956
Some College	$27,984	$11,947	$4,477	$125,595	$90,370	$123,209	$383,583
Total	$145,325	$251,525	$111,979	$793,740	$918,542	$1,305,833	$3,526,944

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-30
DISTRIBUTION OF DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN OUTPATIENT NON-METHADONE (IN PERCENT OF PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	24%	12%	44%	25%	41%	30%	30%
Male	76%	88%	56%	75%	59%	70%	70%
Total	100%	100%	100%	100%	100%	100%	100%
Race/Ethnicity							
African-American	44%	62%	44%	41%	80%	66%	61%
White Non-Hispanic	34%	19%	21%	28%	7%	17%	19%
Hispanic	13%	12%	33%	22%	10%	15%	16%
Asian		1%		1%		0%	0%
Other	9%	6%	2%	8%	3%	2%	4%
Total	100%	100%	100%	100%	100%	100%	100%
Baseline Age							
Under 21	30%	60%	10%	10%	3%	15%	14%
21 to 30	29%	23%	31%	22%	33%	31%	29%
31 to 40	30%	14%	42%	39%	48%	39%	39%
40 plus	10%	3%	17%	30%	16%	15%	18%
Total	100%	100%	100%	100%	100%	100%	100%
Education							
HS Dropout	35%	68%	46%	36%	39%	49%	44%
GED	18%	12%	19%	16%	14%	18%	16%
HS Grad	32%	14%	25%	27%	33%	25%	27%
Some College	15%	6%	10%	21%	13%	9%	13%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT C-31
DRUG OF ABUSE BY POPULATION CHARACTERISTICS IN OUTPATIENT NON-METHADONE (IN PERSONS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	19	11	23	106	160	204	523
Male	60	84	29	311	229	484	1,197
Total	79	95	52	417	389	688	1,720
Race/Ethnicity							
African-American	35	59	23	172	310	452	1,051
White Non-Hispanic	27	18	11	118	29	117	320
Hispanic	10	11	17	90	37	102	267
Asian		1		3		3	7
Other	7	6	1	34	13	14	75
Total	79	95	52	417	389	688	1,720
Baseline Age							
Under 21	24	57	5	40	11	103	240
21 to 30	23	22	16	91	128	212	492
31 to 40	24	13	22	161	187	271	678
40 plus	8	3	9	125	63	102	310
Total	79	95	52	417	389	688	1,720
Education							
HS Dropout	28	65	24	152	153	339	761
GED	14	11	10	68	56	121	280
HS Grad	25	13	13	111	129	169	460
Some College	12	6	5	86	51	59	219
Total	79	95	52	417	389	688	1,720

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT C-32
AVERAGE COST OF TREATMENT IN OUTPATIENT NON-METHADONE BY POPULATION CHARACTERISTICS (IN DOLLARS)

	Drug of Abuse						Total
	Other	Marijuana Only	Heroin Only	Alcohol Only	Crack/ Cocaine Only	Polydrug	
Gender							
Female	$1,854	$3,369	$1,735	$2,152	$3,483	$2,792	$2,805
Male	$1,835	$2,553	$2,486	$1,819	$1,577	$1,521	$1,721
Total	$1,840	$2,648	$2,153	$1,903	$2,361	$1,898	$2,051
Race/Ethnicity							
African-American	$1,701	$2,400	$2,395	$1,823	$2,596	$1,954	$2,148
White Non-Hispanic	$2,341	$2,496	$875	$1,913	$1,490	$1,861	$1,889
Hispanic	$1,109	$1,651	$2,707	$1,872	$1,565	$1,554	$1,723
Asian		$2,265		$1,886		$2,097	$2,031
Other	$1,641	$7,427	$1,240	$2,364	$981	$2,873	$2,542
Total	$1,840	$2,648	$2,153	$1,903	$2,361	$1,898	$2,051
Baseline Age							
Under 21	$1,983	$2,530	$1,939	$2,756	$1,185	$2,115	$2,261
21 to 30	$1,776	$3,059	$1,874	$1,858	$2,417	$1,790	$2,024
31 to 40	$1,642	$2,570	$2,576	$1,871	$2,350	$1,762	$1,987
40 plus	$2,185	$2,200	$1,735	$1,706	$2,488	$2,266	$2,067
Total	$1,840	$2,648	$2,153	$1,903	$2,361	$1,898	$2,051
Education							
HS Dropout	$1,837	$2,583	$2,125	$2,206	$2,613	$2,049	$2,234
GED	$1,294	$1,735	$3,160	$1,975	$1,922	$1,458	$1,740
HS Grad	$1,911	$4,048	$1,916	$1,789	$2,486	$1,843	$2,078
Some College	$2,332	$1,991	$895	$1,460	$1,772	$2,088	$1,752
Total	$1,840	$2,648	$2,153	$1,903	$2,361	$1,898	$2,051

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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APPENDIX D
HEALTH CARE UTILIZATION

APPENDIX D
HEALTH CARE UTILIZATION

EXHIBIT D-1
PREDICTING THE PROBABILITY OF HEALTH CARE UTILIZATION IN THE POST-TREATMENT PERIOD ESTIMATED LOGISTIC REGRESSIONS IN THE PROBABILITY OF UTILIZATION

	ANY VISIT DURING THE REFERENCE PERIOD TO:								
	Hospital			Emergency Room			Visit to a Physician/Clinic		
VARIABLE	Parameter	Std error	*/**	Parameter	Std error	*/**	Parameter	Std error	*/**
Intercept	-3.798	0.356		-1.934	0.277		-1.331	0.230	
Days in post-discharge period	0.003	0.001	*	0.003	0.000	*	0.001	0.000	
Medical severity	0.009	0.002	*	0.005	0.001	*	0.009	0.001	*
Psychiatric severity	0.008	0.002	*	0.011	0.002	*	0.005	0.002	*
Criminal severity	0.001	0.002	*	0.006	0.002	*	0.000	0.001	
Health status excellent	1.328	0.149		1.097	0.140	*	0.581	0.139	*
ST hospital	0.520	0.184	**	0.012	0.171		-0.089	0.153	
LT hospital	0.766	1.169		1.810	1.165		-0.715	1.159	
ST residential	0.000	0.124	*	0.019	0.094		0.000	0.078	
LT residential	0.009	0.113	*	-0.120	0.088		0.089	0.073	
Outpatient methadone	0.435	0.183	**	-0.028	0.165		-0.249	0.135	**
Male binary	-0.572	0.095		-0.390	0.078	*	-0.517	0.067	*
Age at post-treatment interview	0.000	0.005	*	-0.023	0.004	*	0.002	0.004	
Education highest level	0.040	0.022	*	0.014	0.018		0.052	0.015	*
Ever had prior treatment	0.589	0.095		0.295	0.079	*	0.408	0.067	*
-2 log L (degrees of freedom)	336.993 (14)		*	280.722 (14)		*	298.843 (14)		*

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Notes: * denotes significant at 5%, and ** at 10%
All logistic regressions are significant at the 0.01% (p=0.0001 for the -2 log L), implying that the null hypothesis that all explanatory variables in the model are zero is strongly rejected.

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EXHIBIT D-2
COMPARISON OF APPROACHES: LINEAR ANNUALIZATION VS. 2-STEP APPROACH TO CALCULATING PERCENT OF RESPONDENTS USING HEALTH CARE SERVICES

Label	Raw data	Linear Annualization	2-step approach	Adj-Raw (% point diff)	Adj-Annual. (% point diff)
Hospital visits- before treatment	19.6%	19.6%	19.6%	0.0%	0.0%
Clinic visits- before treatment	48.9%	48.9%	48.9%	0.0%	0.0%
ER visits- before treatment	34.6%	34.7%	34.7%	0.0%	0.0%
Hospital visits- after treatment	12.5%	15.4%	13.8%	1.3%	-1.6%
Clinic visits- after treatment	42.5%	56.0%	43.2%	0.6%	-12.8%
ER visits- after treatment	21.7%	26.9%	23.9%	2.1%	-3.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Notes: There are 5114 observations in the analytical file.
Post treatment utilization rates have been adjusted to reflect one year of utilization using logistic regression.

EXHIBIT D-3
PREDICTING THE NUMBER OF HEALTH CARE UTILIZATION IN THE POST-TREATMENT PERIOD
DOUBLE-LOG REGRESSIONS OF THE NUMBER OF TIMES OF UTILIZATION

	NUMBER OF VISITS DURING THE REFERENCE PERIOD TO:								
	Hospital			Emergency Room			Visit to a Physician/Clinic		
VARIABLE	Parameter	Std error	*/**	Parameter	Std error	*/**	Parameter	Std error	*/**
Intercept	-1.912	1.150	**	0.135	0.622		-0.728	0.418	**
Days in post-discharge period	0.192	0.152		0.190	0.082	*	0.199	0.054	*
Medical severity	0.060	0.046		0.034	0.021		0.056	0.015	*
Psychiatric severity	0.025	0.036		0.053	0.020	*	0.028	0.013	*
Criminal severity	-0.053	0.031	**	0.033	0.018	**	0.023	0.012	**
Age at post-treatmt interview	0.386	0.171	*	-0.094	0.093		0.262	0.065	*
Education highest level	0.239	0.219		-0.184	0.122		-0.043	0.085	
Health status excellent	0.322	0.132	*	0.385	0.087	*	0.432	0.072	*
ST hospital	0.238	0.176		-0.013	0.120		-0.156	0.090	**
LT hospital	-0.775	1.172		0.251	0.500		-1.338	0.852	
ST residential	0.023	0.133		-0.082	0.069		-0.101	0.050	*
LT residential	0.057	0.119		-0.080	0.065		-0.042	0.045	
Outpatient methadone	0.504	0.187	*	-0.048	0.123		-0.079	0.087	
Male binary	0.149	0.100		-0.139	0.057	*	-0.181	0.040	*
Ever had prior treatment	0.050	0.100		0.149	0.057	*	0.093	0.041	*
Adjusted R-squared	4.0%			5.0%			6.8%		
N	631			1,106			2,171		

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Notes: * denotes significant at 5%, and ** at 10%

The regressions have been performed on observations with nonzero utilization incidence (as the log is undefined for zero)

Smearing factors have been used to retransform log values into original non-log values

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EXHIBIT D-4
COMPARISON OF APPROACHES: LINEAR ANNUALIZATION VS. 2-STEP APPROACH TO CALCULATING NUMBER OF INCIDENTS OF HEALTH CARE UTILIZATION

Label	Raw data	Annualized	Adjusted	Adj-Raw (% change)	Adj-Annual. (% change)
#-Nights in Hospital, Pre-Treatment	1.636	1.636	1.636	0.0%	0.0%
#Medical Visits, Pre-Treatment	2.567	2.567	2.567	0.0%	0.0%
#ER visits, Pre-Treatment	1.120	1.120	1.120	0.0%	0.0%
#-Nights in Hospital, Post-Treatment	1.191	1.376	1.356	13.8%	-1.5%
#Medical Visits, Post-Treatment	2.360	3.058	2.524	6.9%	-17.5%
#ER visits, Post-Treatment	0.674	0.813	0.757	12.4%	-6.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

Notes: There are 5114 observations in the analytical file.
Post treatment utilization rates have been adjusted to reflect one year of utilization using RAND's 2-step procedure.

EXHIBIT D-5
ESTIMATED AVERAGE COST OF AN INPATIENT DAY, EMERGENCY ROOM VISIT, PHYSICIAN AND CLINIC VISIT IN 1994
(IN DOLLARS)

TYPE OF UTILIZATION	COST	SOURCE	METHODOLOGY
Hospital Day			
	$930	AHA's Hospital Statistics: 1998 edition	Total expenses per adjusted inpatient day for nonfederal short-term general and other special hospitals, 1994 dollars, is $929.65
Emergency Room Visit			
	$227	Williams, R. 1996. The costs of visits to emergency departments. New England Journal of Medicine, March 7 Vol 334, No 10, pp. 642-646	The average cost in 1993 was $209.42. The CPI medical care for hospital room in 1993 was 8.5% (Stat Abstract of the US 1997, p. 119). The 1994 estimate is therefore $227.22
Physician/ Clinic Visit			
	$92	AMA's Physician Marketplace Statistics, 1996 edition Statistical Abstract of the U.S., 1997	The mean fee for an office visit in 1996 was $58.6 or $54.13 in 1994 (deflated by CPI-physician in Stat Abstract 97, p 119). Add in practice expense of about 41% of total (or $37.61) yields $91.75.

Source: The Lewin Group

TABLE D-6
AVERAGE HEALTH CARE COSTS FOR HOSPITAL STAYS BY SELECTED GROUPS (IN DOLLARS)

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		
	Before Treatment	After Treatment	% CHANGE
Male (3395)	$1,362.02	$1,196.61	-12.1%
Female (1469)	$2,039.13	$1,749.63	-14.2%
African-American (2909)	$1,549.54	$1,281.74	-17.3%
White Non-Hispanic (1406)	$1,925.46	$1,608.45	-16.5%
Hispanic (768)	$1,023.23	$1,285.05	25.6%
High school dropout (2467)	$1,495.81	$1,362.08	-8.9%
GED (827)	$1,604.69	$1,460.40	-9.0%
High school graduate (986)	$1,234.65	$833.41	-32.5%
Some college (984)	$1,961.09	$1,749.62	-10.8%
Marijuana only (204)	$547.04	$536.50	-1.9%
Crack/Cocaine only (1176)	$1,561.05	$1,428.48	-8.5%
Heroin only (435)	$1,990.36	$1,381.31	-30.6%
Alcohol (849)	$1,318.85	$1,459.24	10.6%
Multiple drug addiction (2469)	$1,635.48	$1,344.55	-17.8%
1 month or less of treat. (1547)	$1,736.13	$1,807.63	4.1%
1-2 months (1470)	$1,422.81	$1,164.22	-18.2%
3-4 months (963)	$1,308.55	$860.73	-34.2%
5-6 months (334)	$1,097.05	$982.66	-10.4%
6 or more months (950)	$1,853.11	$1,522.60	-17.8%
Less than 21 years old (667)	$1,074.23	$635.99	-40.8%
21-30 years old (1725)	$1,360.21	$912.98	-32.9%
31-40 years old (2041)	$1,566.07	$1,677.91	7.1%
40+ years old (821)	$2,307.39	$2,047.84	-11.2%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT D-7
AVERAGE HEALTH CARE COSTS FOR VISITS TO PHYSICIANS AND CLINICS BY SELECTED GROUPS (IN DOLLARS)

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		% CHANGE
	Before Treatment	After Treatment	
Male (3395)	$200.90	$251.05	25.0%
Female (1469)	$329.77	$392.93	19.2%
African-American (2909)	$221.81	$285.06	28.5%
White Non-Hispanic (1406)	$284.90	$328.66	15.4%
Hispanic (768)	$195.14	$228.11	16.9%
High school dropout (2467)	$218.44	$292.00	33.7%
GED (827)	$236.84	$265.21	12.0%
High school graduate (986)	$234.15	$283.28	21.0%
Some college (984)	$285.77	$315.99	10.6%
Marijuana only (204)	$223.46	$228.28	2.2%
Crack/Cocaine only (1176)	$245.80	$287.67	17.0%
Heroin only (435)	$218.05	$311.17	42.7%
Alcohol (849)	$254.82	$300.45	17.9%
Multiple drug addiction (2469)	$229.42	$287.39	25.3%
1 month or less of treat. (1547)	$234.22	$253.62	8.3%
1-2 months (1470)	$226.87	$244.10	7.6%
3-4 months (963)	$228.90	$276.17	20.7%
5-6 months (334)	$216.23	$319.01	47.5%
6 or more months (950)	$271.93	$427.64	57.3%
Less than 21 years old (667)	$236.32	$282.77	19.7%
21-30 years old (1725)	$218.88	$237.31	8.4%
31-40 years old (2041)	$234.35	$288.01	22.9%
40+ years old (821)	$281.32	$415.73	47.8%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT D-8
AVERAGE HEALTH CARE COSTS FOR EMERGENCY ROOM VISITS BY SELECTED GROUPS (IN DOLLARS)

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		% CHANGE
	Before Treatment	After Treatment	
Male (3395)	$224.25	$155.77	-30.5%
Female (1469)	$325.36	$256.89	-21.0%
African-American (2909)	$244.05	$162.57	-33.4%
White Non-Hispanic (1406)	$288.43	$210.88	-26.9%
Hispanic (768)	$227.89	$204.99	-10.0%
Hgh school dropout (2467)	$252.90	$190.71	-24.6%
GED (827)	$264.19	$202.91	-23.2%
High school graduate (986)	$211.11	$141.68	-32.9%
Some college (984)	$282.94	$193.63	-31.6%
Marijuana only (204)	$224.22	$188.38	-16.0%
Crack/Cocaine only (1176)	$257.79	$186.07	-27.8%
Heroin only (435)	$199.34	$132.76	-33.4%
Alcohol (849)	$229.67	$185.88	-19.1%
Multiple drug addiction (2469)	$270.90	$190.33	-29.7%
1 month or less of treat. (1547)	$296.63	$198.61	-33.0%
1-2 months (1470)	$242.44	$155.62	-35.8%
3-4 months (963)	$256.58	$176.90	-31.1%
5-6 months (334)	$172.29	$218.22	26.7%
6 or more months (950)	$220.07	$199.24	-9.5%
Less than 21 years old (667)	$255.50	$205.21	-19.7%
21-30 years old (1725)	$258.39	$187.15	-27.6%
31-40 years old (2041)	$258.64	$176.18	-31.9%
40+ years old (821)	$222.16	$179.28	-19.3%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT D-9
AVERAGE NUMBER OF HOSPITAL STAYS BY SELECTED GROUPS

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		
	Before Treatment	After Treatment	% CHANGE
Male (3395)	1.46	1.29	-12.1%
Female (1469)	2.19	1.88	-14.2%
African-American (2909)	1.67	1.38	-17.3%
White Non-Hispanic (1406)	2.07	1.73	-16.5%
Hispanic (768)	1.10	1.38	25.6%
High school dropout (2467)	1.61	1.46	-8.9%
GED (827)	1.73	1.57	-9.0%
High school graduate (986)	1.33	0.90	-32.5%
Some college (984)	2.11	1.88	-10.8%
Marijuana only (204)	0.59	0.58	-1.9%
Crack/Cocaine only (1176)	1.68	1.54	-8.5%
Heroin only (435)	2.14	1.49	-30.6%
Alcohol (849)	1.42	1.57	10.6%
Multiple drug addiction (2469)	1.76	1.45	-17.8%
1 month or less of treat. (1547)	1.87	1.94	4.1%
1-2 months (1470)	1.53	1.25	-18.2%
3-4 months (963)	1.41	0.93	-34.2%
5-6 months (334)	1.18	1.06	-10.4%
6 or more months (950)	1.99	1.64	-17.8%
Less than 21 years old (667)	1.16	0.68	-40.8%
21-30 years old (1725)	1.46	0.98	-32.9%
31-40 years old (2041)	1.68	1.80	7.1%
40+ years old (821)	2.48	2.20	-11.2%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT D-10
AVERAGE NUMBER OF VISITS TO CLINICS BY SELECTED GROUPS

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		
	Before Treatment	After Treatment	% CHANGE
Male (3395)	2.18	2.73	25.0%
Female (1469)	3.58	4.27	19.2%
African-American (2909)	2.41	3.10	28.5%
White Non-Hispanic (1406)	3.10	3.57	15.4%
Hispanic (768)	2.12	2.48	16.9%
High school dropout (2467)	2.37	3.17	33.7%
GED (827)	2.57	2.88	12.0%
High school graduate (986)	2.55	3.08	21.0%
Some college (984)	3.11	3.43	10.6%
Marijuana only (204)	2.43	2.48	2.2%
Crack/Cocaine only (1176)	2.67	3.13	17.0%
Heroin only (435)	2.37	3.38	42.7%
Alcohol (849)	2.77	3.27	17.9%
Multiple drug addiction (2469)	2.49	3.12	25.3%
1 month or less of treat. (1547)	2.55	2.76	8.3%
1-2 months (1470)	2.47	2.65	7.6%
3-4 months (963)	2.49	3.00	20.7%
5-6 months (334)	2.35	3.47	47.5%
6 or more months (950)	2.96	4.65	57.3%
Less than 21 years old (667)	2.57	3.07	19.7%
21-30 years old (1725)	2.38	2.58	8.4%
31-40 years old (2041)	2.55	3.13	22.9%
40+ years old (821)	3.06	4.52	47.8%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT D-11
AVERAGE NUMBER OF EMERGENCY ROOM VISITS BY SELECTED GROUPS

GROUP (OBSERVATIONS) [2]	SAMPLE SIZE=5264		% CHANGE
	Before Treatment	After Treatment	
Male (3395)	0.99	0.69	-30.5%
Female (1469)	1.43	1.13	-21.0%
African-American (2909)	1.08	0.72	-33.4%
White-Non-Hispanic (1406)	1.27	0.93	-26.9%
Hispanic (768)	1.00	0.90	-10.0%
High school dropout (2467)	1.11	0.84	-24.6%
GED (827)	1.16	0.89	-23.2%
High school graduate (986)	0.93	0.62	-32.9%
Some college (984)	1.25	0.85	-31.6%
Marijuana only (204)	0.99	0.83	-16.0%
Crack/Cocaine only (1176)	1.14	0.82	-27.8%
Heroin only (435)	0.88	0.58	-33.4%
Alcohol (849)	1.01	0.82	-19.1%
Multiple drug addiction (2469)	1.19	0.84	-29.7%
1 month or less of treat. (1547)	1.31	0.87	-33.0%
1-2 months (1470)	1.07	0.69	-35.8%
3-4 months (963)	1.13	0.78	-31.1%
5-6 months (334)	0.76	0.96	26.7%
6 or more months (950)	0.97	0.88	-9.5%
Less than 21 years old (667)	1.13	0.90	-19.7%
21-30 years old (1725)	1.14	0.82	-27.6%
31-40 years old (2041)	1.14	0.78	-31.9%
40+ years old (821)	0.98	0.79	-19.3%

Notes: *Indicates significance at the 95-percent confidence level, NA = Not applicable
[1]The values associated with the period after treatment have been annualized.
[2]The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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TABLE D-12
AVERAGE HEALTH CARE UTILIZATION BY MODALITY
(NUMBER OF STAYS/VISITS)

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Hospital Stays (in Days)						
Before	1.67	1.89	1.25	1.99	2.74	1.37
During	1.45	3.36	1.10	1.22	2.92	1.32
% Change	-13.2%	77.8%	-12.1%	-38.9%	6.6%	-3.8%
Visits to Clinics						
Before	2.57	2.11	2.19	2.56	2.33	3.00
During	3.16	3.20	2.44	3.30	3.95	3.35
% Change	23.0%	51.6%	11.5%	29.0%	69.9%	11.7%
Visits to ER						
Before	1.11	1.72	1.05	1.20	0.76	1.09
During	0.81	1.14	0.70	0.75	0.75	0.92
% Change	-27.0%	-33.6%	-33.0%	-37.3%	-2.0%	-15.9%

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TABLE D-13
PERCENT OF RESPONDENTS REPORTING HEALTH CARE UTILIZATION BY MODALITY
(IN PERCENT OF PERSONS)

Variable	Total (n=5264)	Short-term Hospital (n=216)	Short-term Residential (n=1263)	Long-term Residential (n=1618)	Outpatient Methadone (n=443)	Ambulatory Outpatient (n=1720)
Hospital Stays (in Days)						
Before	0.20	0.21	0.16	0.22	0.23	0.19
During	0.16	0.31	0.13	0.14	0.24	0.15
% Change	-19.9%	47.3%	-22.8%	-34.1%	3.1%	-19.8%
Visits to Clinics						
Before	0.49	0.44	0.46	0.49	0.39	0.53
During	0.57	0.57	0.48	0.61	0.67	0.58
% Change	17.9%	27.7%	3.6%	24.2%	72.4%	10.6%
Visits to ER						
Before	0.34	0.43	0.36	0.36	0.26	0.33
During	0.27	0.34	0.25	0.26	0.28	0.29
% Change	-21.2%	-19.5%	-30.8%	-29.1%	7.2%	-11.6%

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APPENDIX E
DETAILED TABLES ON ANNUAL EARNINGS AND SOCIAL WELFARE BENEFITS

APPENDIX E
DETAILED TABLES ON ANNUAL EARNINGS AND SOCIAL WELFARE BENEFITS

EXHIBIT E-1
TOTAL EARNINGS BY CLIENT CHARACTERISTICS (IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$2,922,722	$3,376,763	$454,042	15.5%
Male	$17,685,497	$19,079,828	$1,394,331	7.9%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Race/Ethnicity				
African-American	$9,585,949	$9,634,124	$48,175	0.5%
White Non-Hispanic	$7,808,050	$8,562,799	$754,749	9.7%
Hispanic	$2,567,024	$3,466,630	$899,606	35.0%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Baseline Age				
Under 21	$776,679	$1,402,921	$626,242	80.6%
21 to 30	$6,351,601	$7,329,025	$977,424	15.4%
31 to 40	$9,786,957	$10,000,797	$213,840	2.2%
40 Plus	$3,692,982	$3,723,848	$30,867	0.8%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Education				
HS Dropout	$4,973,673	$6,245,282	$1,271,609	25.6%
GED	$3,667,339	$4,377,818	$710,480	19.4%
HS Grad	$7,194,213	$6,818,908	$-375,305	-5.2%
Some College	$4,772,994	$5,014,583	$241,589	5.1%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-2
AVERAGE EARNINGS BY CLIENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$1,990	$2,299	$309	15.5%
Male	$4,660	$5,028	$367	7.9%
Total	$3,915	$4,266	$351	9.0%
Race/Ethnicity				
African-American	$3,295	$3,312	$17	0.5%
White Non-Hispanic	$5,553	$6,090	$537	9.7%
Hispanic	$3,342	$4,514	$1,171	35.1%
Total	$3,915	$4,266	$351	9.0%
Baseline Age				
Under 21	$1,147	$2,072	$925	80.6%
21 to 30	$3,682	$4,249	$567	15.4%
31 to 40	$4,795	$4,900	$105	2.2%
40 Plus	$4,498	$4,536	$38	0.8%
Total	$3,915	$4,266	$351	9.0%
Education				
HS Dropout	$2,133	$2,678	$545	25.6%
GED	$3,653	$4,360	$708	19.4%
HS Grad	$5,612	$5,319	$-293	-5.2%
Some College	$7,389	$7,763	$374	5.1%
Total	$3,915	$4,266	$351	9.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT E-3
EARNERS BY CLIENT CHARACTERISTICS
(IN PERSONS AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Gender					
Female	513	616	9.7%	11.7%	20.1%
Male	1957	2023	37.2%	38.4%	3.4%
Total	2470	2639	46.9%	50.1%	6.8%
Race/Ethnicity					
African-American	1210	1284	23.0%	24.4%	6.1%
White Non-Hispanic	796	855	15.1%	16.2%	7.4%
Hispanic	375	396	7.1%	7.5%	5.6%
Total	2470	2639	46.9%	50.1%	6.8%
Baseline Age					
Under 21	265	306	5.0%	5.8%	15.5%
21 to 30	865	929	16.4%	17.6%	7.4%
31 to 40	1003	1058	19.1%	20.1%	5.5%
40 Plus	337	346	6.4%	6.6%	2.7%
Total	2470	2639	46.9%	50.1%	6.8%
Education					
HS Dropout	827	974	15.7%	18.5%	17.8%
GED	507	501	9.6%	9.5%	-1.2%
HS Grad	723	744	13.7%	14.1%	2.9%
Some College	413	420	7.8%	8.0%	1.7%
Total	2470	2639	46.9%	50.1%	6.8%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-4
TOTAL WELFARE BENEFITS BY CLIENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$779,097	$951,124	$172,027	22.1%
Male	$2,310,736	$2,109,925	$-200,811	-8.7%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Race/Ethnicity				
African-American	$1,762,766	$1,972,442	$209,676	11.9%
White Non-Hispanic	$1,003,809	$712,415	$-291,394	-29.0%
Hispanic	$209,033	$269,039	$60,006	28.7%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Baseline Age				
Under 21	$42,782	$74,237	$31,454	73.5%
21 to 30	$667,662	$498,351	$-169,311	-25.4%
31 to 40	$1,448,702	$1,418,810	$-29,892	-2.1%
40 Plus	$930,686	$1,069,650	$138,965	14.9%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Education				
HS Dropout	$1,249,121	$1,377,445	$128,323	10.3%
GED	$543,517	$485,120	$-58,398	-10.7%
HS Grad	$764,793	$761,447	$-3,346	-0.4%
Some College	$532,401	$437,037	$-95,364	-17.9%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-5
AVERAGE WELFARE BENEFITS BY CLIENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$530	$647	$117	22.1%
Male	$609	$556	$-53	-8.7%
Total	$587	$582	$-5	-0.9%
Race/Ethnicity				
African-American	$606	$678	$72	11.9%
White Non-Hispanic	$714	$507	$-207	-29.0%
Hispanic	$272	$350	$78	28.7%
Total	$587	$582	$-5	-0.9%
Baseline Age				
Under 21	$63	$110	$46	74.6%
21 to 30	$387	$289	$-98	-25.3%
31 to 40	$710	$695	$-15	-2.1%
40 Plus	$1,134	$1,303	$169	14.9%
Total	$587	$582	$-5	-0.9%
Education				
HS Dropout	$536	$591	$55	10.3%
GED	$541	$483	$-58	-10.7%
HS Grad	$597	$594	$-3	-0.5%
Some College	$824	$677	$-148	-17.8%
Total	$587	$582	$-5	-0.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-6
WELFARE RECIPIENTS BY CLIENT CHARACTERISTICS
(IN PERSON AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Gender					
Female	887	826	16.9%	15.7%	-6.9%
Male	980	827	18.6%	15.7%	-15.6%
Total	1867	1653	35.5%	31.4%	-11.5%
Race/Ethnicity					
African-American	1212	1062	23.0%	20.2%	-12.4%
White Non-Hispanic	348	337	6.6%	6.4%	-3.2%
Hispanic	250	202	4.7%	3.8%	-19.2%
Total	1867	1653	35.5%	31.4%	-11.5%
Baseline Age					
Under 21	95	79	1.8%	1.5%	-16.8%
21 to 30	629	569	11.9%	10.8%	-9.5%
31 to 40	820	738	15.6%	14.0%	-10.0%
40 Plus	323	267	6.1%	5.1%	-17.3%
Total	1867	1653	35.5%	31.4%	-11.5%
Education					
HS Dropout	866	760	16.5%	14.4%	-12.2%
GED	338	308	6.4%	5.9%	-8.9%
HS Grad	490	421	9.3%	8.0%	-14.1%
Some College	173	164	3.3%	3.1%	-5.2%
Total	1867	1653	35.5%	31.4%	-11.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-7
TOTAL SSI BENEFITS BY CLIENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$2,517,539	$2,530,275	$12,736	0.5%
Male	$1,291,163	$1,321,192	$30,029	2.3%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Race/Ethnicity				
African-American	$2,543,119	$2,534,031	$-9,088	-0.4%
White Non-Hispanic	$704,733	$711,698	$6,965	1.0%
Hispanic	$454,944	$484,535	$29,591	6.5%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Baseline Age				
Under 21	$86,054	$135,359	$49,306	57.3%
21 to 30	$1,372,613	$1,312,178	$-60,435	-4.4%
31 to 40	$1,684,603	$1,811,760	$127,157	7.5%
40 Plus	$665,432	$592,169	$-73,262	-11.0%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Education				
HS Dropout	$1,832,154	$1,869,469	$37,315	2.0%
GED	$645,631	$595,122	$-50,509	-7.8%
HS Grad	$1,004,670	$1,064,486	$59,816	6.0%
Some College	$326,246	$322,389	$-3,857	-1.2%
Total	$3,808,702	$3,851,467	$42,766	1.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT E-8
AVERAGE SSI BENEFITS BY CLIENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Gender				
Female	$1,714	$1,722	$9	0.5%
Male	$340	$348	$8	2.4%
Total	$724	$732	$8	1.1%
Race/Ethnicity				
African-American	$874	$871	$-3	-0.3%
White Non-Hispanic	$501	$506	$5	1.0%
Hispanic	$592	$631	$39	6.6%
Total	$724	$732	$8	1.1%
Baseline Age				
Under 21	$127	$200	$73	57.5%
21 to 30	$796	$761	$-35	-4.4%
31 to 40	$825	$888	$62	7.6%
40 Plus	$811	$721	$-89	-11.1%
Total	$724	$732	$8	1.1%
Education				
HS Dropout	$786	$802	$16	2.0%
GED	$643	$593	$-50	-7.8%
HS Grad	$784	$830	$47	5.9%
Some College	$505	$499	$-6	-1.2%
Total	$724	$732	$8	1.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-9
SSI BENEFICIARIES BY CLIENT CHARACTERISTICS
(IN PERSONS AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Gender					
Female	202	211	3.8%	4.0%	4.5%
Male	536	472	10.2%	9.0%	-11.9%
Total	738	683	14.0%	13.0%	-7.5%
Race/Ethnicity					
African-American	421	441	8.0%	8.4%	4.8%
White Non-Hispanic	219	158	4.2%	3.0%	-27.9%
Hispanic	72	64	1.4%	1.2%	-11.1%
Total	738	683	14.0%	13.0%	-7.5%
Baseline Age					
Under 21	18	23	0.3%	0.4%	27.8%
21 to 30	184	133	3.5%	2.5%	-27.7%
31 to 40	346	327	6.6%	6.2%	-5.5%
40 Plus	190	200	3.6%	3.8%	5.3%
Total	738	683	14.0%	13.0%	-7.5%
Education					
HS Dropout	307	312	5.8%	5.9%	1.6%
GED	133	110	2.5%	2.1%	-17.3%
HS Grad	188	165	3.6%	3.1%	-12.2%
Some College	110	96	2.1%	1.8%	-12.7%
Total	738	683	14.0%	13.0%	-7.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-10
TOTAL EARNINGS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$553,108	$559,073	$5,965	1.1%
Short-Term Residential	$8,629,128	$7,449,963	$-1,179,166	-13.7%
Long-Term Residential	$3,733,850	$4,167,951	$434,101	11.6%
Methadone Maintenance	$1,414,705	$1,243,575	$-171,130	-12.1%
Outpatient (Non-Methadone)	$6,267,578	$9,032,675	$2,765,098	44.1%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Drug of Abuse				
Other	$961,075	$1,089,128	$128,054	13.3%
Marijuana	$548,816	$676,981	$128,165	23.4%
Heroin	$5,254,149	$5,211,760	$-42,389	-0.8%
Alcohol	$1,434,526	$1,441,389	$6,863	0.5%
Crack/Cocaine	$4,934,642	$5,542,207	$607,565	12.3%
Polydrug	$7,475,011	$8,495,126	$1,020,115	13.6%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Treatment Duration				
1 Month or Less	$7,095,169	$6,784,804	$-310,366	-4.4%
1 or 2 Months	$6,088,367	$6,117,979	$29,613	0.5%
3 or 4 Months	$3,596,928	$3,997,684	$400,756	11.1%
5 Months	$799,907	$1,031,814	$231,907	29.0%
6 Months or More	$3,027,848	$4,524,310	$1,496,463	49.4%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%
Treatment Cost				
$500 or Less	$3,496,519	$3,460,274	$-36,246	-1.0%
$501 to $1,000	$3,317,298	$3,339,975	$22,677	0.7%
$1,001 to $1,500	$2,689,740	$2,901,414	$211,674	7.9%
$1,501 to $2,000	$2,717,868	$2,867,576	$149,708	5.5%
$2,001 to $4,000	$3,676,486	$4,487,144	$810,658	22.0%
$4,001 to $6,000	$2,763,771	$2,699,609	$-64,162	-2.3%
$6,001 to $10,000	$930,240	$1,268,738	$338,498	36.4%
Over $10,000	$1,016,296	$1,431,861	$415,566	40.9%
Total	$20,608,219	$22,456,591	$1,848,373	9.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-11
AVERAGE EARNINGS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$2,561	$2,588	$28	1.1%
Short-Term Residential	$6,832	$5,899	$-934	-13.7%
Long-Term Residential	$2,308	$2,576	$268	11.6%
Methadone Maintenance	$3,193	$2,807	$-386	-12.1%
Outpatient (Non-Methadone)	$3,644	$5,252	$1,608	44.1%
Total	$3,915	$4,266	$351	9.0%
Drug of Abuse				
Other	$4,781	$5,419	$637	13.3%
Marijuana	$2,690	$3,319	$628	23.4%
Heroin	$4,468	$4,432	$-36	-0.8%
Alcohol	$3,298	$3,314	$16	0.5%
Crack/Cocaine	$5,812	$6,528	$716	12.3%
Polydrug	$3,116	$3,541	$425	13.6%
Total	$3,915	$4,266	$351	9.0%
Treatment Duration				
1 Month or Less	$4,586	$4,386	$-201	-4.4%
1 or 2 Months	$4,142	$4,162	$20	0.5%
3 or 4 Months	$3,735	$4,151	$416	11.1%
5 Months	$2,395	$3,089	$694	29.0%
6 Months or More	$3,187	$4,762	$1,575	49.4%
Total	$3,915	$4,266	$351	9.0%
Treatment Cost				
$500 or Less	$2,933	$2,903	$-30	-1.0%
$501 to $1,000	$4,394	$4,424	$30	0.7%
$1,001 to $1,500	$4,317	$4,657	$340	7.9%
$1,501 to $2,000	$4,463	$4,709	$246	5.5%
$2,001 to $4,000	$3,622	$4,421	$799	22.1%
$4,001 to $6,000	$5,868	$5,732	$-136	-2.3%
$6,001 to $10,000	$3,551	$4,843	$1,292	36.4%
Over $10,000	$3,016	$4,249	$1,233	40.9%
Total	$3,915	$4,266	$351	9.0%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT E-12
EARNERS BY TREATMENT CHARACTERISTICS
(IN PERSONS AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Modality					
Short-Term Hospital	77	84	1.5%	1.6%	9.1%
Short-Term Residential	837	846	15.9%	16.1%	1.1%
Long-Term Residential	575	660	10.9%	12.5%	14.8%
Methadone Maintenance	136	118	2.6%	2.2%	-13.2%
Outpatient (Non-Methadone)	842	927	16.0%	17.6%	10.1%
Total	2470	2639	46.9%	50.1%	6.8%
Drug of Abuse					
Other	102	116	1.9%	2.2%	13.7%
Marijuana	91	101	1.7%	1.9%	11.0%
Heroin	591	601	11.2%	11.4%	1.7%
Alcohol	160	160	3.0%	3.0%	0.0%
Crack/Cocaine	490	497	9.3%	9.4%	1.4%
Polydrug	1036	1164	19.7%	22.1%	12.4%
Total	2470	2639	46.9%	50.1%	6.8%
Treatment Duration					
1 Month or Less	807	882	15.3%	16.8%	9.3%
1 or 2 Months	736	776	14.0%	14.7%	5.4%
3 or 4 Months	430	417	8.2%	7.9%	-3.0%
5 Months	118	148	2.2%	2.8%	25.4%
6 Months or More	379	416	7.2%	7.9%	9.8%
Total	2470	2639	46.9%	50.1%	6.8%
Treatment Cost					
$500 or Less	476	475	9.0%	9.0%	-0.2%
$501 to $1,000	372	390	7.1%	7.4%	4.8%
$1,001 to $1,500	330	336	6.3%	6.4%	1.8%
$1,501 to $2,000	311	355	5.9%	6.7%	14.1%
$2,201 to $4,000	476	504	9.0%	9.6%	5.9%
$4,001 to $6,000	245	245	4.7%	4.7%	0.0%
$6,001 to $10,000	117	140	2.2%	2.7%	19.7%
Over $10,000	143	194	2.7%	3.7%	35.7%
Total	2470	2639	46.9%	50.1%	6.8%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-13
TOTAL WELFARE BENEFITS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$667,702	$516,396	$-151,306	-22.7%
Short-Term Residential	$487,877	$327,846	$-160,031	-32.8%
Long-Term Residential	$515,082	$491,654	$-23,428	-4.5%
Methadone Maintenance	$382,119	$448,987	$66,867	17.5%
Outpatient (Non-Methadone)	$1,037,053	$1,276,166	$239,113	23.1%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Drug of Abuse				
Other	$120,475	$44,685	$-75,790	-62.9%
Marijuana	$46,692	$55,969	$9,276	19.9%
Heroin	$586,014	$532,928	$-53,085	-9.1%
Alcohol	$282,576	$312,231	$29,654	10.5%
Crack/Cocaine	$638,737	$570,915	$-67,822	-10.6%
Polydrug	$1,415,338	$1,544,320	$128,982	9.1%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Treatment Duration				
1 Month or Less	$1,285,762	$1,056,268	$-229,494	-17.8%
1 or 2 Months	$593,539	$630,564	$37,024	6.2%
3 or 4 Months	$444,970	$392,899	$-52,071	-11.7%
5 Months	$218,500	$193,528	$-24,972	-11.4%
6 Months or More	$547,061	$787,789	$240,728	44.0%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%
Treatment Cost				
$500 or Less	$474,953	$430,051	$-44,902	-9.5%
$501 to $1,000	$404,579	$389,353	$-15,226	-3.8%
$1,001 to $1,500	$288,807	$301,950	$13,143	4.6%
$1,501 to $2,000	$360,997	$367,552	$6,555	1.8%
$2,001 to $4,000	$856,361	$741,394	$-114,968	-13.4%
$4,001 to $6,000	$408,939	$354,918	$-54,020	-13.2%
$6,001 to $10,000	$169,481	$271,345	$101,864	60.1%
Over $10,000	$125,715	$204,485	$78,770	62.7%
Total	$3,089,832	$3,061,048	$-28,784	-0.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-14
AVERAGE WELFARE BENEFITS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$3,091	$2,391	$-700	-22.6%
Short-Term Residential	$386	$260	$-127	-32.6%
Long-Term Residential	$318	$304	$-14	-4.4%
Methadone Maintenance	$863	$1,014	$151	17.5%
Outpatient (Non-Methadone)	$603	$742	$139	23.1%
Total	$587	$582	$-5	-0.9%
Drug of Abuse				
Other	$599	$222	$-377	-62.9%
Marijuana	$229	$274	$45	19.7%
Heroin	$498	$453	$-45	-9.0%
Alcohol	$650	$718	$68	10.5%
Crack/Cocaine	$752	$672	$-80	-10.6%
Polydrug	$590	$644	$54	9.2%
Total	$587	$582	$-5	-0.9%
Treatment Duration				
1 Month or Less	$831	$683	$-148	-17.8%
1 or 2 Months	$404	$429	$25	6.2%
3 or 4 Months	$462	$408	$-54	-11.7%
5 Months	$654	$579	$-75	-11.5%
6 Months or More	$576	$829	$253	43.9%
Total	$587	$582	$-5	-0.9%
Treatment Cost				
$500 or Less	$398	$361	$-38	-9.3%
$501 to $1,000	$536	$516	$-20	-3.7%
$1,001 to $1,500	$464	$485	$21	4.5%
$1,501 to $2,000	$593	$604	$11	1.9%
$2,001 to $4,000	$844	$730	$-113	-13.5%
$4,001 to $6,000	$868	$754	$-115	-13.1%
$6,001 to $10,000	$647	$1,036	$389	60.1%
Over $10,000	$373	$607	$234	62.7%
Total	$587	$582	$-5	-0.9%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-15
WELFARE RECIPIENTS BY TREATMENT CHARACTERISTICS
(IN PERSONS AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Modality					
Short-Term Hospital	65	59	1.2%	1.1%	-9.2%
Short-Term Residential	240	261	4.6%	5.0%	8.7%
Long-Term Residential	564	518	10.7%	9.8%	-8.2%
Methadone Maintenance	273	231	5.2%	4.4%	-15.4%
Outpatient (Non-Methadone)	724	583	13.8%	11.1%	-19.5%
Total	1867	1653	35.5%	31.4%	-11.5%
Drug of Abuse					
Other	42	35	0.8%	0.7%	-16.7%
Marijuana	30	29	0.6%	0.6%	-3.3%
Heroin	480	430	9.1%	8.2%	-10.4%
Alcohol	214	183	4.1%	3.5%	-14.5%
Crack/Cocaine	206	179	3.9%	3.4%	-13.1%
Polydrug	895	797	17.0%	15.1%	-10.9%
Total	1867	1653	35.5%	31.4%	-11.5%
Treatment Duration					
1 Month or Less	561	535	10.7%	10.2%	-4.6%
1 or 2 Months	471	435	8.9%	8.3%	-7.6%
3 or 4 Months	291	238	5.5%	4.5%	-18.2%
5 Months	148	126	2.8%	2.4%	
6 Months or More	396	319	7.5%	6.1%	-19.4%
Total	1867	1653	35.5%	31.4%	-11.5%
Treatment Cost					
$500 or Less	331	284	6.3%	5.4%	-14.2%
$501 to $1,000	250	223	4.7%	4.2%	-10.8%
$1,001 to $1,500	226	202	4.3%	3.8%	-10.6%
$1,501 to $2,000	234	208	4.4%	4.0%	-11.1%
$2,201 to $4,000	385	333	7.3%	6.3%	-13.5%
$4,001 to $6,000	157	149	3.0%	2.8%	-5.1%
$6,001 to $10,000	127	112	2.4%	2.1%	-11.8%
Over $10,000	157	142	3.0%	2.7%	-9.6%
Total	1867	1653	35.5%	31.4%	-11.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-16
TOTAL SSI BENEFITS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$137,099	$163,651	$26,552	19.4%
Short-Term Residential	$440,427	$431,654	$-8,773	-2.0%
Long-Term Residential	$1,211,483	$1,208,413	$-3,069	-0.3%
Methadone Maintenance	$585,597	$569,350	$-16,247	-2.8%
Outpatient (Non-Methadone)	$1,433,945	$1,477,591	$43,647	3.0%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Drug of Abuse				
Other	$99,858	$81,701	$-18,158	-18.2%
Marijuana	$63,418	$57,510	$-5,908	-9.3%
Heroin	$1,120,448	$1,106,008	$-14,439	-1.3%
Alcohol	$438,700	$419,249	$-19,451	-4.4%
Crack/Cocaine	$396,984	$414,771	$17,787	4.5%
Polydrug	$1,689,293	$1,772,229	$82,935	4.9%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Treatment Duration				
1 Month or Less	$1,190,219	$1,138,596	$-51,623	-4.3%
1 or 2 Months	$852,383	$845,323	$-7,060	-0.8%
3 or 4 Months	$551,936	$571,744	$19,808	3.6%
5 Months	$338,865	$356,705	$17,841	5.3%
6 Months or More	$875,299	$939,098	$63,799	7.3%
Total	$3,808,702	$3,851,467	$42,766	1.1%
Treatment Cost				
$500 or Less	$554,570	$505,520	$-49,050	-8.8%
$501 to $1,000	$491,515	$439,329	$-52,186	-10.6%
$1,001 to $1,500	$457,390	$464,253	$6,863	1.5%
$1,501 to $2,000	$499,924	$484,439	$-15,485	-3.1%
$2,001 to $4,000	$775,459	$823,618	$48,159	6.2%
$4,001 to $6,000	$344,812	$383,092	$38,281	11.1%
$6,001 to $10,000	$280,185	$323,862	$43,677	15.6%
Over $10,000	$404,847	$427,354	$22,507	5.6%
Total	$3,808,702	$3,851,467	$42,766	1.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-17
AVERAGE SSI BENEFITS BY TREATMENT CHARACTERISTICS
(IN DOLLARS)

	Before Treatment	After Treatment	Dollar Change	Percent Change
Modality				
Short-Term Hospital	$635	$758	$123	19.4%
Short-Term Residential	$349	$342	$-7	-2.0%
Long-Term Residential	$749	$747	$-2	-0.3%
Methadone Maintenance	$1,322	$1,285	$-37	-2.8%
Outpatient (Non-Methadone)	$834	$859	$25	3.0%
Total	$724	$732	$8	1.1%
Drug of Abuse				
Other	$497	$406	$-90	-18.3%
Marijuana	$311	$282	$-29	-9.3%
Heroin	$953	$940	$-12	-1.4%
Alcohol	$1,009	$964	$-45	-4.5%
Crack/Cocaine	$468	$489	$21	4.5%
Polydrug	$704	$739	$35	5.0%
Total	$724	$732	$8	1.1%
Treatment Duration				
1 Month or Less	$769	$736	$-33	-4.3%
1 or 2 Months	$580	$575	$-5	-0.9%
3 or 4 Months	$573	$594	$21	3.7%
5 Months	$1,015	$1,068	$53	5.2%
6 Months or More	$921	$989	$67	7.4%
Total	$724	$732	$8	1.1%
Treatment Cost				
$500 or Less	$465	$424	$-41	-8.8%
$501 to $1,000	$651	$582	$-69	-10.6%
$1,001 to $1,500	$734	$745	$11	1.5%
$1,501 to $2,000	$821	$795	$-25	-3.2%
$2,001 to $4,000	$764	$811	$47	6.2%
$4,001 to $6,000	$732	$813	$81	11.1%
$6,001 to $10,000	$1,069	$1,236	$167	15.6%
Over $10,000	$1,201	$1,268	$67	5.6%
Total	$724	$732	$8	1.1%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT E-18
SSI RECIPIENTS BY TREATMENT CHARACTERISTICS
(IN PERSONS AND PERCENT OF CLIENTS)

	Persons		Percent of Clients		Percent Change
	Before Treatment	After Treatment	Before Treatment	After Treatment	
Modality					
Short-Term Hospital	130	113	2.5%	2.1%	-13.1%
Short-Term Residential	143	89	2.7%	1.7%	-37.8%
Long-Term Residential	146	132	2.8%	2.5%	-9.6%
Methadone Maintenance	72	84	1.4%	1.6%	16.7%
Outpatient (Non-Methadone)	247	265	4.7%	5.0%	7.3%
Total	738	683	14.0%	13.0%	-7.5%
Drug of Abuse					
Other	20	15	0.4%	0.3%	-25.0%
Marijuana	14	8	0.3%	0.2%	-42.9%
Heroin	159	137	3.0%	2.6%	-13.8%
Alcohol	58	55	1.1%	1.0%	-5.2%
Crack/Cocaine	153	129	2.9%	2.5%	-15.7%
Polydrug	334	339	6.3%	6.4%	1.5%
Total	738	683	14.0%	13.0%	-7.5%
Treatment Duration					
1 Month or Less	290	246	5.5%	4.7%	-15.2%
1 or 2 Months	164	158	3.1%	3.0%	-3.7%
3 or 4 Months	106	90	2.0%	1.7%	-15.1%
5 Months	47	50	0.9%	0.9%	6.4%
6 Months or More	131	139	2.5%	2.6%	6.1%
Total	738	683	14.0%	13.0%	-7.5%
Treatment Cost					
$500 or Less	113	101			
$501 to $1,000	101	94	1.9%	1.8%	-6.9%
$1,001 to $1,500	83	72	1.6%	1.4%	-13.3%
$1,501 to $2,000	82	86	1.6%	1.6%	4.9%
$2,201 to $4,000	193	164	3.7%	3.1%	-15.0%
$4,001 to $6,000	89	67	1.7%	1.3%	-24.7%
$6,001 to $10,000	38	53	0.7%	1.0%	39.5%
Over $10,000	39	46	0.7%	0.9%	17.9%
Total	738	683	14.0%	13.0%	-7.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-19
PERSONS BY CHANGE IN EARNINGS AND TREATMENT CHARACTERISTICS (IN PERSONS)

	Change in Earnings							
	Decrease			Change<	Increase			
	$15,000 +	$5-15,000	$1-5,000	$1,000	$1-5,000	$5-15,000	$15,000 +	Total
Modality								
Short-Term Hospital	80	173	196	117	258	169	46	1039
Short-Term Residential	28	100	163	192	206	136	37	862
Long-Term Residential	20	35	32	23	31	30	11	182
Methadone Maintenance	37	135	189	204	281	237	87	1170
Outpatient (Non-Methadone)	169	460	605	560	805	584	186	3369
Drug of Abuse								
Other	4	10	24	37	32	24	2	133
Marijuana	7	19	22	16	37	33	9	143
Heroin	19	32	47	24	57	27	19	225
Alcohol	35	96	110	94	122	119	39	615
Crack/Cocaine	46	116	144	130	179	116	46	777
Polydrug	58	187	258	259	378	265	71	1476
Total	169	460	605	560	805	584	186	3369
Treatment Duration								
1 Month or Less	52	166	191	192	275	144	45	1065
1 or 2 Months	50	139	193	164	242	170	41	999
3 or 4 Months	31	72	116	89	113	121	34	576
5 months	4	20	35	34	56	27	9	185
6 Months Plus	32	63	70	81	119	122	57	544
Total	169	460	605	560	805	584	186	3369
Treatment Cost								
$500 or Less	29	109	128	110	152	104	28	660
$501 to $1,000	26	70	94	78	118	79	21	486
$1,001 to $1,500	15	61	78	73	103	75	20	425
$1,501 to $2,000	21	61	75	57	120	73	19	426
$2,001 to $4,000	34	78	117	122	139	122	48	660
$4,001 to $6,000	28	46	51	44	74	54	19	316
$6,001 to $10,000	4	17	31	36	37	29	14	168
Over $10,000	12	18	31	40	62	48	17	228
Total	169	460	605	560	805	584	186	3369

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-20
DISTRIBUTION OF PERSONS BY CHANGE IN EARNINGS AND TREATMENT CHARACTERISTICS (IN PERCENT OF PERSONS WITH EARNINGS)

	Change in Earnings							
	Decrease			Change < $1,000	Increase			
	$15,000 +	$5-15,000	$1-5,000		$1-5,000	$5-15,000	$15,000 +	Total
Modality								
Short-Term Hospital	8%	17%	19%	11%	25%	16%	4%	100%
Short-Term Residential	3%	12%	19%	22%	24%	16%	4%	100%
Long-Term Residential	11%	19%	18%	13%	17%	16%	6%	100%
Methadone Maintenance	3%	12%	16%	17%	24%	20%	7%	100%
Outpatient (Non-Methadone)	5%	14%	18%	17%	24%	17%	6%	100%
Drug of Abuse								
Other	3%	8%	18%	28%	24%	18%	2%	100%
Marijuana	5%	13%	15%	11%	26%	23%	6%	100%
Heroin	8%	14%	21%	11%	25%	12%	8%	100%
Alcohol	6%	16%	18%	15%	20%	19%	6%	100%
Crack/Cocaine	6%	15%	19%	17%	23%	15%	6%	100%
Polydrug	4%	13%	17%	18%	26%	18%	5%	100%
Total	5%	14%	18%	17%	24%	17%	6%	100%
Treatment Duration								
1 Month or Less	5%	16%	18%	18%	26%	14%	4%	100%
1 or 2 Months	5%	14%	19%	16%	24%	17%	4%	100%
3 or 4 Months	5%	13%	20%	15%	20%	21%	6%	100%
5 months	2%	11%	19%	18%	30%	15%	5%	100%
6 Months or More	6%	12%	13%	15%	22%	22%	10%	100%
Total	5%	14%	18%	17%	24%	17%	6%	100%
Treatment Cost								
$500 or Less	4%	17%	19%	17%	23%	16%	4%	100%
$501 to $1,000	5%	14%	19%	16%	24%	16%	4%	100%
$1,001 to $1,500	4%	14%	18%	17%	24%	18%	5%	100%
$1,501 to $2,000	5%	14%	18%	13%	28%	17%	4%	100%
$2,001 to $4,000	5%	12%	18%	18%	21%	18%	7%	100%
$4,001 to $6,000	9%	15%	16%	14%	23%	17%	6%	100%
$6,001 to $10,000	2%	10%	18%	21%	22%	17%	8%	100%
Over $10,000	5%	8%	14%	18%	27%	21%	7%	100%
Total	5%	14%	18%	17%	24%	17%	6%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

EXHIBIT E-21
PERSONS BY CHANGE IN WELFARE BENEFITS AND TREATMENT CHARACTERISTICS
(IN PERSONS)

	Change in Welfare							Total
	Decrease			Change < $500	Increase			
	$2500 +	$1-2,500	$500-1,000		$500-1,000	$1-2,500	$2,500 +	
Modality								
Short-Term Residential	33	58	43	87	60	84	25	390
Long-Term Residential	88	119	73	192	83	103	75	733
Methadone Maintenance	37	47	29	75	22	76	25	311
Outpatient	80	142	125	219	94	153	78	891
Drug of Abuse								
Heroin	30	36	26	58	28	56	18	252
Alcohol	27	41	29	69	33	50	27	276
Crack/Cocaine	78	100	63	138	59	103	69	610
Polydrug	97	187	148	308	136	205	96	1177
Treatment Duration								
1 Month or Less	95	117	75	175	88	131	73	754
1 or 2 Months	50	95	70	182	83	97	39	616
3 or 4 Months	26	68	49	96	45	59	31	374
5 months	23	27	21	43	13	38	22	187
6 Months Plus	54	73	64	102	39	101	54	487
Treatment Cost								
$500 or Less	39	59	56	125	49	64	23	415
$501 to $1,000	30	65	41	75	41	57	24	333
$1,001 to $1,500	27	48	36	67	42	54	28	302
$1,501 to $2,000	34	53	28	80	32	62	26	315
$2,001 to $4,000	53	62	64	135	47	83	50	494
$4,001 to $6,000	25	28	20	51	22	38	21	205
$6,001 to $10,000	15	25	18	36	15	24	21	154
Over $10,000	25	40	16	29	20	44	26	200
Total	248	380	279	598	268	426	219	2418

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-22
DISTRIBUTION OF PERSONS BY CHANGE IN WELFARE BENEFITS AND TREATMENT CHARACTERISTICS (IN PERCENT OF PERSONS WITH BENEFITS)

	Change in Welfare							Totall
	Decrease			Change < $500	Increase			
	$2500 +	$1-2,500	$500-1,000		$500-1,000	$1-2,500	$2,500 +	
Modality								
Short-Term Residential	8%	15%	11%	22%	15%	22%	6%	100%
Long-Term Residential	12%	16%	10%	26%	11%	14%	10%	100%
Methadone Maintenance	12%	15%	9%	24%	7%	24%	8%	100%
Outpatient (Non-Methadone)	9%	16%	14%	25%	11%	17%	9%	100%
Drug of Abuse								
Heroin	12%	14%	10%	23%	11%	22%	7%	100%
Alcohol	10%	15%	11%	25%	12%	18%	10%	100%
Crack/Cocaine	13%	16%	10%	23%	10%	17%	11%	100%
Polydrug	8%	16%	13%	26%	12%	17%	8%	100%
Treatment Duration								
1 Month or Less	13%	16%	10%	23%	12%	17%	10%	100%
1 or 2 Months	8%	15%	11%	30%	13%	16%	6%	100%
3 or 4 Months	7%	18%	13%	26%	12%	16%	8%	100%
5 months	12%	14%	11%	23%	7%	20%	12%	100%
6 Months Plus	11%	15%	13%	21%	8%	21%	11%	100%
Treatment Cost								
$500 or Less	9%	14%	13%	30%	12%	15%	6%	100%
$501 to $1,000	9%	20%	12%	23%	12%	17%	7%	100%
$1,001 to $1,500	9%	16%	12%	22%	14%	18%	9%	100%
$1,501 to $2,000	11%	17%	9%	25%	10%	20%	8%	100%
$2,001 to $4,000	11%	13%	13%	27%	10%	17%	10%	100%
$4,001 to $6,000	12%	14%	10%	25%	11%	19%	10%	100%
$6,001 to $10,000	10%	16%	12%	23%	10%	16%	14%	100%
Over $10,000	13%	20%	8%	15%	10%	22%	13%	100%
Total	10%	16%	12%	25%	11%	18%	9%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-23
PERSONS BY CHANGE IN SSI BENEFITS AND TREATMENT CHARACTERISTICS (IN PERSONS)

	Change in SSI							
	Decrease			Change < $500	Increase			Total
	$2500 +	$1-2,500	$500-1,000		$500-1,000	$1-2,500	$2,500 +	
Modality								
Short-Term Hospital	48	11	8	34	12	14	17	144
Long-Term Residential	48	37	17	28	18	22	54	224
Methadone Maintenance	26	7	11	9	9	15	36	113
Outpatient (Non-Methadone)	97	45	12	53	26	36	123	392
Drug of Abuse								
Heroin	20	10	9	10	2	7	28	86
Alcohol	61	31	10	26	11	24	52	215
Crack/Cocaine	52	37	14	35	13	21	53	225
Polydrug	126	51	26	68	45	53	124	493
Treatment Duration								
1 Month or Less	111	44	20	66	25	39	68	373
1 or 2 Months	53	39	16	31	24	25	63	251
3 or 4 Months	41	22	14	18	7	15	38	155
5 months	23	4	3	7	5	12	16	70
6 Months Plus	48	26	9	27	12	16	78	216
Treatment Cost								
$500 or Less	43	24	11	20	12	15	40	165
$501 to $1,000	34	20	6	23	9	19	36	147
$1,001 to $1,500	30	18	7	17	8	11	28	119
$1,501 to $2,000	32	12	7	13	7	24	28	123
$2,001 to $4,000	72	30	25	40	14	24	52	257
$4,001 to $6,000	36	19	2	19	13	3	23	115
$6,001 to $10,000	15	5	4	9	4	5	30	72
Over $10,000	14	7		8	6	6	26	67
Total	276	135	62	149	73	107	263	1065

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-24
DISTRIBUTION OF PERSONS BY CHANGE IN SSI BENEFITS AND TREATMENT CHARACTERISTICS (IN PERCENT OF PERSONS WITH BENEFITS)

	Change in SSI							
	Decrease			Change < $500	Increase			Total
	$2500 +	$1-2,500	$500-1,000		$500-1,000	$1-2,500	$2,500 +	
Modality								
Short-Term Hospital	33%	8%	6%	24%	8%	10%	12%	100%
Long-Term Residential	21%	17%	8%	13%	8%	10%	24%	100%
Methadone Maintenance	23%	6%	10%	8%	8%	13%	32%	100%
Outpatient (Non-Methadone)	25%	11%	3%	14%	7%	9%	31%	100%
Drug of Abuse								
Heroin	23%	12%	10%	12%	2%	8%	33%	100%
Alcohol	28%	14%	5%	12%	5%	11%	24%	100%
Crack/Cocaine	23%	16%	6%	16%	6%	9%	24%	100%
Polydrug	26%	10%	5%	14%	9%	11%	25%	100%
Treatment Duration								
1 Month or Less	30%	12%	5%	18%	7%	10%	18%	100%
1 or 2 Months	21%	16%	6%	12%	10%	10%	25%	100%
3 or 4 Months	26%	14%	9%	12%	5%	10%	25%	100%
5 months	33%	6%	4%	10%	7%	17%	23%	100%
6 Months Plus	22%	12%	4%	13%	6%	7%	36%	100%
Treatment Cost								
$500 or Less	26%	15%	7%	12%	7%	9%	24%	100%
$501 to $1,000	23%	14%	4%	16%	6%	13%	24%	100%
$1,001 to $1,500	25%	15%	6%	14%	7%	9%	24%	100%
$1,501 to $2,000	26%	10%	6%	11%	6%	20%	23%	100%
$2,001 to $4,000	28%	12%	10%	16%	5%	9%	20%	100%
$4,001 to $6,000	31%	17%	2%	17%	11%	3%	20%	100%
$6,001 to $10,000	21%	7%	6%	13%	6%	7%	42%	100%
Over $10,000	21%	10%		12%	9%	9%	39%	100%
Total	26%	13%	6%	14%	7%	10%	25%	100%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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EXHIBIT E-25
CHANGES IN INCOME, INCOME PER CLIENT, AND CLIENTS WITH INCOME BY TYPE AND MODALITY

	Modality					
	Short-Term Hospital	**Short-Term Residential**	**Long-Term Residential**	**Methadone Maintenance**	**Outpatient (Non-Meth)**	**Total**
Total Earnings (dollars)						
Before Treatment	$553,108	$8,629,128	$3,733,850	$1,414,705	$6,267,578	$20,608,219
After Treatment	$559,073	$7,449,963	$4,167,951	$1,243,575	$9,032,675	$22,456,591
Dollar Change	$5,965	$-1,179,166	$434,101	$-171,130	$2,765,098	$1,848,373
Percent Change	1.1%	-13.7%	11.6%	-12.1%	44.1%	9.0%
Average Earnings (dollars)						
Before Treatment	$2,561	$6,832	$2,308	$3,193	$3,644	$3,915
After Treatment	$2,588	$5,899	$2,576	$2,807	$5,252	$4,266
Dollar Change	$28	$-934	$268	$-386	$1,608	$351
Percent Change	1.1%	-13.7%	11.6%	-12.1%	44.1%	9.0%
Earners (persons and percent of clients)						
Before Treatment	77	837	575	136	842	2470
After Treatment	84	846	660	118	927	2639
Before Treatment	1.5%	15.9%	10.9%	2.6%	16.0%	46.9%
After Treatment	1.6%	16.1%	12.5%	2.2%	17.6%	50.1%
Percent Change	9.1%	1.1%	14.8%	-13.2%	10.1%	6.8%
Total Welfare Benefits (dollars)						
Before Treatment	$137,099	$440,427	$1,211,483	$585,597	$1,433,945	$3,808,702
After Treatment	$163,651	$431,654	$1,208,413	$569,350	$1,477,591	$3,851,467
Dollar Change	$26,552	$-8,773	$-3,069	$-16,247	$43,647	$42,766
Percent Change	19.4%	-2.0%	-0.3%	-2.8%	3.0%	1.1%

	Modality					
	Short-Term Hospital	**Short-Term Residential**	**Long-Term Residential**	**Methadone Maintenance**	**Outpatient (Non-Meth)**	**Total**
Average Welfare Benefit (dollars)						
Before Treatment	$635	$349	$749	$1,322	$834	$724
After Treatment	$758	$342	$747	$1,285	$859	$732
Dollar Change	$123	$-7	$-2	$-37	$25	$8
Percent Change	19.4%	-2.0%	-0.3%	-2.8%	3.0%	1.1%
Recipients (persons and percent of clients)						
Before Treatment	65	240	564	273	724	1867
After Treatment	59	261	518	231	583	1653
Before Treatment	1.2%	4.6%	10.7%	5.2%	13.8%	35.5%
After Treatment	1.1%	5.0%	9.8%	4.4%	11.1%	31.4%
Percent Change	-9.2%	8.7%	-8.2%	-15.4%	-19.5%	-11.5%
Total SSI Benefits (dollars)						
Before Treatment	$667,702	$487,877	$515,082	$382,119	$1,037,053	$3,089,832
After Treatment	$516,396	$327,846	$491,654	$448,987	$1,276,166	$3,061,048
Dollar Change	$-151,306	$-160,031	$-23,428	$66,867	$239,113	$-28,784
Percent Change	-22.7%	-32.8%	-4.5%	17.5%	23.1%	-0.9%
Average SSI Benefit (dollars)						
Before Treatment	$3,091	$386	$318	$863	$603	$587
After Treatment	$2,391	$260	$304	$1,014	$742	$582
Dollar Change	$-700	$-127	$-14	$151	$139	$-5
Percent Change	-22.6%	-32.6%	-4.4%	17.5%	23.1%	-0.9%
Recipients (persons and percent of clients)						
Before Treatment	130	143	146	72	247	738
After Treatment	113	89	132	84	265	683
Before Treatment	2.5%	2.7%	2.8%	1.4%	4.7%	14.0%
After Treatment	2.1%	1.7%	2.5%	1.6%	5.0%	13.0%
Percent Change	-13.1%	-37.8%	-9.6%	16.7%	7.3%	-7.5%

Source: Authors' analysis of data from the National Treatment Improvement Evaluation Study

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APPENDIX F
CRIME-RELATED COSTS AND CRIMINAL ACTIVITY

APPENDIX F
CRIME-RELATED COSTS AND CRIMINAL ACTIVITY

In this appendix, we present detailed tables on crime-related costs and criminal activity. Our methodology for calculating crime-related costs appears in Appendix B. However, to conduct our pre/post analysis of criminal activity, we used different criteria for a client's responses to be included in the analytic data set. We first selected respondents that had completed both the baseline and follow-up interviews. In total, 6,593 respondents completed the baseline interview, while 5,388 had also completed the follow-up interview. Since the analysis attempts to identify the impact of treatment on criminal behavior, respondents who were still in treatment at the time of the follow-up interview were excluded from the sample, unless they were in methadone treatment. This exclusion resulted in a sample size of 5,264. This is the base data set used in calculating crime-related costs.

Before performing the analysis, however, it was necessary to make a number of additional adjustments in order to maximize the appropriateness of the comparisons across periods. We dropped from this analysis those respondents who were incarcerated during the entire 12-month period prior to the administration of the baseline interview. Similarly, respondents incarcerated during the entire length of the follow-up reference period were removed from the pre/post-treatment analysis. Excluding the responses of these individuals is appropriate because they cannot commit crimes against the general public nor can they be arrested while in jail. These adjustments resulted in an additional 459 respondents being eliminated for a final sample size of 4,805 clients.

We annualized the responses in the follow-up interview based on the length of a respondent's post-discharge reference period. Such an adjustment was necessary because the baseline interview responses relate to the 12-month period prior to treatment. However, the length of the post-discharge reference period differs across individuals and may be less than or greater than 12 months. A "time-at-risk" adjustment is also appropriate to account for the portion of a respondent's reference period that the individual was incarcerated and, therefore, unable to engage in criminal acts. For individuals released from jail during a given reference period, NTIES does not contain information indicating their release dates. Therefore, a time-at-risk adjustment was only made for respondents in jail at the time they were interviewed. We believe that this adjustment makes our estimates more conservative, since more respondents were released from jail during the baseline interview reference period (31 percent) than during the follow-up interview reference period (14 percent).

To adjust for varying follow-up interview reference periods and for time spent incarcerated, we multiplied an individual's responses by 365 days divided by the difference between the length in days of his or her reference period and the days he or she spent in jail. This method assumes that the probability of an event (a crime, an arrest, etc.) is uniformly distributed over time.

EXHIBIT F-1
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME (N=5,264)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$5,145	$1,312	$3,833	74.5%
Adjudication and Sentencing	$670	$339	$331	49.4%
Corrections: Jail	$4,251	$889	$3,362	79.1%
Corrections: Parole/Probation	$152	$53	$99	65.1%
Victim Costs	$1,244	$258	$986	79.3%
Theft Losses	$4,924	$1,269	$3,654	74.2%
Total Cost to Society	$11,462	$2,851	$8,611	75.1%
Total Cost to Non-treated Population	$16,386	$4,120	$12,266	74.9%

Source: Authors' analysis of the NTIES data

EXHIBIT F-2
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME SHORT-TERM HOSPITAL (N=216)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$3,542	$1,508	$2,034	57.4%
Adjudication and Sentencing	$557	$504	$53	9.5%
Corrections: Jail	$1,825	$737	$1,088	59.6%
Corrections: Parole/Probation	$138	$59	$79	57.2%
Victim Costs	$840	$239	$601	71.5%
Theft Losses	$1,711	$962	$749	43.8%
Total Cost to Society	$6,902	$3,047	$3,855	55.9%
Total Cost to Non-treated Population	$8,613	$4,009	$4,604	53.5%

Source: Authors' analysis of the NTIES data

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EXHIBIT F-3
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME SHORT-TERM RESIDENTIAL FACILITY (N=1,263)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$4,439	$737	$3,702	83.4%
Adjudication and Sentencing	$814	$293	$521	64.0%
Corrections: Jail	$4,564	$1,086	$3,478	76.2%
Corrections: Parole/Probation	$124	$48	$76	61.3%
Victim Costs	$1,028	$118	$910	88.5%
Theft Losses	$4,071	$718	$3,353	82.4%
Total Cost to Society	$10,969	$2,282	$8,687	79.2%
Total Cost to Non-treated Population	$15,040	$3,000	$12,040	80.1%

Source: Authors' analysis of the NTIES data

EXHIBIT F-4
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME LONG-TERM RESIDENTIAL FACILITY (N=1,548)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$7,049	$1,727	$5,322	75.5%
Adjudication and Sentencing	$846	$324	$522	61.7%
Corrections: Jail	$6,533	$915	$5,618	86.0%
Corrections: Parole/Probation	$105	$49	$56	53.3%
Victim Costs	$1,802	$438	$1,364	75.7%
Theft Losses	$7,679	$1,931	$5,748	74.9%
Total Cost to Society	$16,335	$3,453	$12,882	78.9%
Total Cost to Non-treated Population	$24,014	$5,384	$18,630	77.6%

Source: Authors' analysis of the NTIES data

EXHIBIT F-5
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME OUTPATIENT METHADONE (N=443)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$5,083	$1,884	$3,199	62.9%
Adjudication and Sentencing	$466	$348	$118	25.3%
Corrections: Jail	$2,087	$601	$1,486	71.2%
Corrections: Parole/Probation	$143	$58	$85	59.4%
Victim Costs	$1,213	$143	$1,070	88.2%
Theft Losses	$8,589	$1,543	$7,046	82.0%
Total Cost to Society	$8,992	$3,034	$5,958	66.3%
Total Cost to Non-treated Population	$17,581	$4,577	$13,004	74.0%

Source: Authors' analysis of the NTIES data

EXHIBIT F-6
ANNUAL PRE- AND POST-TREATMENT CRIME-RELATED COSTS BY TYPE OF CRIME AMBULATORY OUTPATIENT (N=1,720)

Criminal Justice Activity	Avg. Cost per Respondent Pre-Treatment	Avg. Cost per Respondent Post-Treatment	Dollar Savings per Respondent	Percent Savings
Police Protection	$4,080	$1,120	$2,960	72.5%
Adjudication and Sentencing	$555	$363	$192	34.6%
Corrections: Jail	$2,732	$804	$1,928	70.6%
Corrections: Parole/Probation	$220	$58	$162	73.6%
Victim Costs	$933	$208	$725	77.7%
Theft Losses	$2,415	$987	$1,428	59.1%
Total Cost to Society	$8,520	$2,553	$5,967	70.0%
Total Cost to Non-treated Population	$10,935	$3,540	$7,395	67.6%

Source: Authors' analysis of the NTIES data

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EXHIBIT F-7
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY BY SELECTED GROUPS[1]

Group (observations) [2]	Sample Size=4805		% Change
	Before Treatment	After Treatment	
Male (3375)	0.82	0.31	-62.2%*
Female (1430)	0.74	0.34	-54.1%*
African-American (2678)	0.81	0.30	-63.0%*
White (1251)	0.76	0.34	-55.3%*
Hispanic (708)	0.82	0.34	-58.5%*
No high school degree (2232)	0.88	0.36	-59.1%*
High school degree (2386)	0.73	0.29	-60.3%*
College degree (187)	0.64	0.18	-71.9%*
Marijuana (180)	1.04	0.45	-56.7%*
Crack/Cocaine (1079)	0.75	0.30	-60.0%*
Heroin (414)	0.81	0.37	-54.3%*
Alcohol (761)	0.39	0.17	-56.4%*
Multiple drug addiction (2259)	0.90	0.37	-58.9%*
1 month or less (1529)	0.73	0.33	-54.8%*
1-2 months (1312)	0.93	0.33	-64.5%*
3-4 months (813)	0.85	0.32	-62.4%*
5-6 months (337)	0.66	0.27	-59.1%*
6 or more months (814)	0.71	0.31	-56.3%*
Less than 21 years old (605)	1.19	0.53	-55.5%*
21-30 years old (1537)	0.87	0.34	-60.9%*
31-40 years old (1891)	0.74	0.28	-62.2%*
40+ years old (772)	0.50	0.22	-56.0%*

Source: Authors' analysis of the NTIES data

*Indicates significance at the 95-percent confidence level. NA = Not applicable

[1] The values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-8
AVERAGE NUMBER OF CRIMES COMMITTED BY SELECTED GROUPS[1]

Group (observations) [2]	Sample Size=4805		% Change
	Before Treatment	After Treatment	
Male (3375)	48.2	11.6	-76.0%*
Female (1430)	43.5	13.6	-68.7%*
African-American (2678)	42.8	10.7	-75.0%*
White (1251)	47.9	13.4	-72.0%*
Hispanic (708)	60.8	15.4	-74.7%*
No high school degree (2232)	59.6	14.5	-75.7%*
High school degree (2386)	36.1	10.3	-71.5%*
College degree (187)	32.5	7.9	-75.7%*
Marijuana (180)	56.2	17.4	-69.0%*
Crack/Cocaine (1079)	42.2	12.2	-71.1%*
Heroin (414)	50.8	16.4	-67.7%*
Alcohol (761)	10.9	3.6	-67.0%*
Multiple drug addiction (2259)	59.6	13.9	-76.7%*
1 month or less (1529)	42.7	13.7	-67.9%*
1-2 months (1312)	55.7	12.6	-77.4%*
3-4 months (813)	48.0	13.0	-72.9%*
5-6 months (337)	38.9	8.1	-79.2%*
6 or more months (814)	42.5	9.5	-77.6%*
Less than 21 years old (605)	110.1	24.6	-77.7%*
21-30 years old (1537)	48.3	12.9	-73.3%*
31-40 years old (1891)	34.5	9.8	-71.6%*
40+ years old (772)	24.8	6.8	-72.6%*

Source: Authors' analysis of the NTIES data

*Indicates significance at the 95-percent confidence level, NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

EXHIBIT F-9
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1]

Criminal Activity[2]	Sample Size=4805		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.16	NA
Stolen a vehicle	0.10	0.02	-74.8%*
Sold drugs or helped sell drugs	0.45	0.15	-65.9%*
Had sex for money or drugs	0.22	0.07	-66.7%*
Shoplifted	0.36	0.14	-62.8%*
Broken into a home/business/vehicle	0.17	0.04	-74.0%*
Used weapon or force to steal	0.09	0.03	-71.3%*
Attacked or threatened with a weapon	0.18	0.05	-70.7%*
Beaten up someone	0.34	0.11	-66.9%*
Severely hurt someone in some other way	0.15	0.03	-78.1%*
Engaged in any criminal activity (crimes)	0.80	0.32	-60.0%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-10
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1] BY MODALITY: SHORT-TERM HOSPITAL

Criminal Activity[2]	Sample Size=213		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.16	NA
Stolen a vehicle	0.02	0.02	-2.6%
Sold drugs or helped sell drugs	0.30	0.18	-39.0%*
Had sex for money or drugs	0.34	0.16	-52.5%*
Shoplifted	0.30	0.16	-46.0%*
Broken into a home/business/vehicle	0.07	0.08	25.8%
Used weapon or force to steal	0.07	0.04	-40.9%
Attacked or threatened with a weapon	0.14	0.08	-45.4%**
Beaten up someone	0.26	0.14	-45.3%*
Severely hurt someone in some other way	0.13	0.05	-61.4%*
Engaged in any criminal activity (crimes listed above)	0.67	0.41	-39.0%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-11
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1] BY MODALITY: SHORT-TERM RESIDENTIAL

Criminal Activity[2]	Sample Size=1148		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.17	NA
Stolen a vehicle	0.07	0.01	-80.8%*
Sold drugs or helped sell drugs	0.54	0.13	-76.0%*
Had sex for money or drugs	0.20	0.06	-68.5%*
Shoplifted	0.38	0.10	-73.5%*
Broken into a home/business/vehicle	0.20	0.03	-84.1%*
Used weapon or force to steal	0.08	0.02	-75.9%*
Attacked or threatened with a weapon	0.17	0.03	-82.0%*
Beaten up someone	0.38	0.10	-73.4%*
Severely hurt someone in some other way	0.17	0.02	-89.0%*
Engaged in criminal any activity (crimes listed above)	0.91	0.28	-69.1%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-12
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1] BY MODALITY: LONG-TERM RESIDENTIAL

Criminal Activity[2]	Sample Size=1349		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.15	NA
Stolen a vehicle	0.21	0.04	-81.0%*
Sold drugs or helped sell drugs	0.68	0.16	-76.5%*
Had sex for money or drugs	0.30	0.08	-73.3%*
Shoplifted	0.47	0.14	-70.2%*
Broken into a home/business/vehicle	0.29	0.05	-82.8%*
Used weapon or force to steal	0.16	0.04	-75.0%*
Attacked or threatened with a weapon	0.31	0.07	-77.4%*
Beaten up someone	0.51	0.14	-72.5%*
Severely hurt someone in some other way	0.20	0.05	-75.0%*
Engaged in any criminal activity (crimes listed above)	1.08	0.33	-69.4%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-13
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1] BY MODALITY: OUTPATIENT METHADONE

Criminal Activity[2]	Sample Size=435		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.17	NA
Stolen a vehicle	0.06	0.01	-83.3%*
Sold drugs or helped sell drugs	0.33	0.22	-33.3%*
Had sex for money or drugs	0.13	0.09	-30.8%*
Shoplifted	0.39	0.28	-28.2%*
Broken into a home/business/vehicle	0.10	0.04	-60.0%*
Used weapon or force to steal	0.05	0.01	-80.0%*
Attacked or threatened with a weapon	0.07	0.05	-28.6%
Beaten up someone	0.16	0.08	-50.0%*
Severely hurt someone in some other way	0.08	0.03	-62.5%*
Engaged in any criminal activity (crimes listed above)	0.61	0.48	-21.3%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-14
PERCENT OF RESPONDENTS REPORTING ENGAGEMENT IN CRIMINAL ACTIVITY[1] BY MODALITY: AMBULATORY OUTPATIENT

Criminal Activity[2]	Sample Size=1656		% Change
	Before Treatment	After Treatment	
Driven while drunk or high	NA	0.16	NA
Stolen a vehicle	0.04	0.02	-50.0%*
Sold drugs or helped sell drugs	0.26	0.14	-46.2%*
Had sex for money or drugs	0.16	0.05	-68.8%*
Shoplifted	0.26	0.11	-57.7%*
Broken into a home/business/vehicle	0.08	0.04	-50.0%*
Used weapon or force to steal	0.05	0.02	-60.0%*
Attacked or threatened with a weapon	0.12	0.05	-58.3%*
Beaten up someone	0.24	0.11	-54.2%*
Severely hurt someone in some other way	0.12	0.03	-75.0%*
Engaged in any criminal activity (crimes listed above)	0.55	0.29	-47.3%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

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EXHIBIT F-15
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1]

Criminal Activity[2]	Sample Size = 4805		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	1.1	0.2	-81.8%*
Sold drugs or helped sell drugs	22.9	5.6	-75.5%*
Had sex for money or drugs	5.9	1.8	-69.5%*
Shoplifted	7.8	2.8	-64.1%*
Broken into a home/business/vehicle	2.2	0.5	-77.3%*
Used weapon or force to steal	1.2	0.2	-83.3%*
Attacked or threatened with a weapon	1.6	0.3	-81.3%*
Beaten up someone	2.8	0.6	-78.6%*
Severely hurt someone in some other way	1.2	0.2	-83.3%*
Average total number of crimes (listed above) committed[3]	46.9	12.2	-74.0%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

EXHIBIT F-16
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1] BY MODALITY: SHORT-TERM HOSPITAL

Criminal Activity[2]	Sample Size = 213		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	0.06	0.05	-18.6%
Sold drugs or helped sell drugs	11.9	5.1	-57.4%*
Had sex for money or drugs	6.6	3.3	-50.5%*
Shoplifted	3.9	4.1	4.7%
Broken into a home/business/vehicle	0.9	0.6	-31.1%
Used weapon or force to steal	0.7	0.1	-80.4%
Attacked or threatened with a weapon	0.9	0.3	-61.8%
Beaten up someone	1.2	0.6	-52.1%**
Severely hurt someone in some other way	0.9	0.2	-82.9%**
Average total number of crimes (listed above) committed[3]	27.1	14.3	-47.2%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

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EXHIBIT F-17
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1] BY MODALITY: SHORT-TERM RESIDENTIAL

Criminal Activity[2]	Sample Size = 1148		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	0.82	0.08	-90.7%*
Sold drugs or helped sell drugs	27.8	4.5	-83.9%*
Had sex for money or drugs	5.1	1.5	-71.6%*
Shoplifted	8.0	1.6	-79.6%*
Broken into a home/business/vehicle	2.4	0.3	-89.4%*
Used weapon or force to steal	0.7	0.08	-88.3%*
Attacked or threatened with a weapon	1.3	0.1	-91.8%*
Beaten up someone	2.3	0.4	-83.7%*
Severely hurt someone in some other way	1.0	0.05	-95.3%*
Average total number of crimes (listed above) committed[3]	49.5	8.5	-82.8%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

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EXHIBIT F-18
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1] BY MODALITY: LONG-TERM RESIDENTIAL

Criminal Activity[2]	Sample Size = 1349		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	2.5	0.5	-80.0%*
Sold drugs or helped sell drugs	38.6	6.6	-82.9%*
Had sex for money or drugs	9.1	2.8	-69.2%*
Shoplifted	11.0	2.5	-77.3%*
Broken into a home/business/vehicle	3.5	0.9	-74.3%*
Used weapon or force to steal	2.3	0.5	-78.3%*
Attacked or threatened with a weapon	2.9	0.5	-82.8%*
Beaten up someone	5.1	0.9	-82.4%*
Severely hurt someone in some other way	1.9	0.2	-89.5%*
Average total number of crimes (listed above) committed[3]	76.9	15.3	-80.1%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

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EXHIBIT F-19
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1] BY MODALITY: METHADONE OUTPATIENT

Criminal Activity[2]	Sample Size = 435		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	1.4	0.04	-97.1%*
Sold drugs or helped sell drugs	16.3	8.5	-47.9%*
Had sex for money or drugs	3.8	2.5	-34.2%
Shoplifted	11.3	8.7	-23.0%**
Broken into a home/business/vehicle	1.9	0.4	-78.9%*
Used weapon or force to steal	0.7	0.1	-85.7%*
Attacked or threatened with a weapon	0.8	0.3	-62.5%**
Beaten up someone	1.2	0.3	-75.0%*
Severely hurt someone in some other way	0.7	0.05	-92.9%*
Average total number of crimes (listed above) committed[3]	38.2	20.8	-45.5%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

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EXHIBIT F-20
NUMBER OF SELF-REPORTED CRIMES COMMITTED BY RESPONDENTS[1] BY MODALITY: AMBULATORY OUTPATIENT

Criminal Activity[2]	Sample Size = 1656		% Change
	Before Treatment	After Treatment	
Stolen a vehicle	0.23	0.24	3.8%
Sold drugs or helped sell drugs	9.8	4.7	-52.0%*
Had sex for money or drugs	4.4	0.9	-79.5%*
Shoplifted	4.9	2.1	-57.1%*
Broken into a home/business/vehicle	1.2	0.3	-75.0%*
Used weapon or force to steal	0.8	0.1	-87.5%*
Attacked or threatened with a weapon	1.1	0.2	-81.8%*
Beaten up someone	2.0	0.6	-70.0%*
Severely hurt someone in some other way	1.0	0.2	-80.0%*
Average total number of crimes (listed above) committed[3]	25.4	9.3	-63.4%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as not engaging in criminal activity.

[3] In NTIES, respondents are asked to report the number of crimes they committed based on the following groupings: 0, 1, 2-5, 6-20, 21-100, 100+. To calculate the average total number of crimes, we used the mean value of each group, except where respondents report committing 100+ crimes. In this case we used a value of 100.

EXHIBIT F-21
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1]

Reason for Arrest[2]	Sample Size=4805		% Change
	Before Treatment	After Treatment	
Drug possession	0.22	0.07	-68.2%*
Drug sale or manufacturing	0.10	0.02	-76.5%*
Driving while intoxicated or under the influence	0.11	0.02	-79.3%*
Prostitution or solicitation	0.02	NA	NA
Forgery, passing bad checks, or credit card fraud	0.03	0.01	-81.6%*
Receiving or possessing stolen goods	0.07	0.02	-72.6%*
Motor vehicle theft	0.06	0.02	-75.1%*
Shoplifting	0.08	0.03	-63.0%*
Breaking and entering or burglary	0.09	0.02	-77.8%*
Armed robbery or robbery by force	0.04	0.01	-78.3%*
Damage to or destruction of property or vandalism	0.03	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.05	0.02	-60.0%*
Simple assault	0.10	0.03	-70.2%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

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EXHIBIT F-22
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1] BY MODALITY: SHORT-TERM HOSPITAL

Reason for Arrest[2]	Sample Size=213		% Change
	Before Treatment	After Treatment	
Drug possession	0.08	0.05	-40.7%
Drug sale or manufacturing	0.02	0.01	-27.7%
Driving while intoxicated or under the influence	0.04	0.05	18.3%
Prostitution or solicitation	0.03	NA	NA
Forgery, passing bad checks, or credit card fraud	0.02	0.02	-6.4%
Receiving or possessing stolen goods	0.02	0.03	38.3%
Motor vehicle theft	0.02	0.01	-31.9%
Shoplifting	0.10	0.08	-19.7%
Breaking and entering or burglary	0.02	0.03	34.0%
Armed robbery or robbery by force	0.02	0.01	-70.7%
Damage to or destruction of property or vandalism	0.02	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.01	0.04	173.8%
Simple assault	0.11	0.07	-37.3%

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

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EXHIBIT F-23
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1] BY MODALITY: SHORT-TERM RESIDENTIAL

Reason for Arrest[2]	Sample Size=1148		% Change
	Before Treatment	After Treatment	
Drug possession	0.29	0.06	-79.0%*
Drug sale or manufacturing	0.10	0.01	-92.4%*
Driving while intoxicated or under the influence	0.19	0.01	-93.2%*
Prostitution or solicitation	0.02	NA	NA
Forgery, passing bad checks, or credit card fraud	0.06	0.01	-90.5%*
Receiving or possessing stolen goods	0.08	0.01	-85.5%*
Motor vehicle theft	0.04	0.01	-88.6%*
Shoplifting	0.10	0.02	-83.1%*
Breaking and entering or burglary	0.10	0.02	-79.2%*
Armed robbery or robbery by force	0.03	0.00	-87.7%*
Damage to or destruction of property or vandalism	0.04	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.05	0.01	-73.9%*
Simple assault	0.13	0.02	-84.4%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

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EXHIBIT F-24
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1] BY MODALITY: LONG-TERM RESIDENTIAL

Reason for Arrest[2]	Sample Size=1349		% Change
	Before Treatment	After Treatment	
Drug possession	0.32	0.07	-78.1%*
Drug sale or manufacturing	0.18	0.03	-83.3%*
Driving while intoxicated or under the influence	0.09	0.02	-80.5%*
Prostitution or solicitation	0.02	NA	NA
Forgery, passing bad checks, or credit card fraud	0.03	0.01	-66.7%*
Receiving or possessing stolen goods	0.12	0.02	-79.7%*
Motor vehicle theft	0.13	0.03	-76.9%*
Shoplifting	0.10	0.04	-60.0%*
Breaking and entering or burglary	0.19	0.02	-89.5%*
Armed robbery or robbery by force	0.09	0.02	-77.8%*
Damage to or destruction of property or vandalism	0.05	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.08	0.02	-75.0%*
Simple assault	0.13	0.03	-76.0%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

EXHIBIT F-25
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1] BY MODALITY: METHADONE OUTPATIENT

Reason for Arrest[2]	Sample Size=435		% Change
	Before Treatment	After Treatment	
Drug possession	0.16	0.15	-6.3%
Drug sale or manufacturing	0.07	0.03	-57.1%*
Driving while intoxicated or under the influence	0.03	0.00	-93.8%*
Prostitution or solicitation	0.01	NA	NA
Forgery, passing bad checks, or credit card fraud	0.01	0.00	-100.0%**
Receiving or possessing stolen goods	0.03	0.01	-66.7%**
Motor vehicle theft	0.01	0.01	-64.3%
Shoplifting	0.09	0.07	-22.2%
Breaking and entering or burglary	0.03	0.02	-38.7%
Armed robbery or robbery by force	0.02	0.00	-100.0%*
Damage to or destruction of property or vandalism	0.00	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.02	0.01	-52.4%
Simple assault	0.03	0.01	-66.7%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

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EXHIBIT F-26
PERCENT OF RESPONDENTS THAT REPORTED BEING ARRESTED[1] BY MODALITY: AMBULATORY OUTPATIENT

Reason for Arrest[2]	Sample Size=1656		% Change
	Before Treatment	After Treatment	
Drug possession	0.12	0.07	-41.7%*
Drug sale or manufacturing	0.05	0.03	-40.0%*
Driving while intoxicated or under the influence	0.10	0.03	-65.6%*
Prostitution or solicitation	0.01	NA	NA
Forgery, passing bad checks, or credit card fraud	0.01	0.00	-85.3%*
Receiving or possessing stolen goods	0.03	0.02	-45.2%*
Motor vehicle theft	0.03	0.01	-66.7%*
Shoplifting	0.05	0.02	-61.5%*
Breaking and entering or burglary	0.03	0.02	-33.3%*
Armed robbery or robbery by force	0.02	0.00	-66.7%*
Damage to or destruction of property or vandalism	0.02	NA	NA
Aggravated assault or having inflicted serious injury on someone	0.05	0.01	-80.0%*
Simple assault	0.08	0.04	-50.0%*

Source: Authors' analysis of the NTIES data

* Indicates significance at the 95-percent confidence level

** Indicates significance at the 90-percent confidence level. NA = Not applicable

[1] The reported values associated with the period after treatment have been annualized.

[2] The small percent of individuals who responded "Don't Know" or "Refusal" are treated as having not been arrested.

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